

STIC Search Report

EIC 1700

STIC Database Tracking Number: 167248

TO: Satya Sastri
Location: REM10A30
Art Unit : 1713
October 3, 2005

Case Serial Number: 10728334

From: Mei Huang
Location: EIC 1700
REMSSEN 4B28
Phone: 571/272-3952
Mei.huang@uspto.gov

Search Notes

Examiner Sastri,

- 14 answers from the search based on all four components, A+B+C+D, using the polymer class terms and text;
- 29 answers from the search based on three components, A+B+D.

If you have any questions or if you would like to refine the search query, please feel free to contact me.

Thank you for using STIC services!

Mei Huang
Patent Information Researcher
REM-4B31
571-272-3952



=> fil reg

FILE 'REGISTRY' ENTERED AT 13:29:31 ON 03 OCT 2005

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STRUCTURE FILE UPDATES: 2 OCT 2005 HIGHEST RN 864354-42-7

DICTIONARY FILE UPDATES: 2 OCT 2005 HIGHEST RN 864354-42-7

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*

Structure search iteration limits have been increased. See HELP SLIMITS for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:

<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 13:29:36 ON 03 OCT 2005

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FILE COVERS 1907 - 3 Oct 2005 VOL 143 ISS 15

FILE LAST UPDATED: 2 Oct 2005 (20051002/ED)

=> d his

(FILE 'HOME' ENTERED AT 10:54:54 ON 03 OCT 2005)

FILE 'REGISTRY' ENTERED AT 10:56:40 ON 03 OCT 2005

L1 STR 139189-30-3

L2 0 S L1

L3 2 S L1 FUL

FILE 'HCAPLUS' ENTERED AT 11:00:15 ON 03 OCT 2005

L4 690 S L3

FILE 'REGISTRY' ENTERED AT 11:01:30 ON 03 OCT 2005

SAV L3 SSASTRI334/A

FILE 'HCAPLUS' ENTERED AT 11:02:03 ON 03 OCT 2005

S L4 AND PACR/PCT

FILE 'REGISTRY' ENTERED AT 11:07:11 ON 03 OCT 2005

L5 312681 S PACR/PCT

FILE 'HCAPLUS' ENTERED AT 11:07:12 ON 03 OCT 2005

FILE 'REGISTRY' ENTERED AT 11:08:04 ON 03 OCT 2005

L6 188000 S PES/PCT

L7 16145 S PR/PCT

L8 0 S L3 AND L6

L9 0 S L3 AND L7

L10 0 S L3 AND L5

FILE 'STNGUIDE' ENTERED AT 11:16:40 ON 03 OCT 2005

FILE 'REGISTRY' ENTERED AT 11:18:54 ON 03 OCT 2005

L11 0 S SAM L1 SUB=L6

L12 0 S FUL L1 SUB=L6

L13 0 S SAM L1 SUB=L7

L14 0 S FUL L1 SUB=L7

L15 0 S SAM L1 SUB=L5

L16 0 S FUL L1 SUB=L5

FILE 'STNGUIDE' ENTERED AT 11:25:49 ON 03 OCT 2005

FILE 'REGISTRY' ENTERED AT 11:38:20 ON 03 OCT 2005

L17 312681 S L5 OR L5

L18 162682 S L17 RAN=(,160713-42-8)

L19 149999 S L17 NOT L18

L20 0 S 139189-30-3/CRN

FILE 'STNGUIDE' ENTERED AT 11:44:34 ON 03 OCT 2005

FILE 'HCAPLUS' ENTERED AT 11:56:04 ON 03 OCT 2005

L21 255 S L3 AND L6

L22 72 S L3 AND L7

L23 313 S L3 AND (L18 OR L19)

L24 7 S L21 AND L22 AND L23

L25 E US20040186208/PN
1 S E3
L26 0 S L25 AND L24

FILE 'STNGUIDE' ENTERED AT 12:09:21 ON 03 OCT 2005

L27 FILE 'HCAPLUS' ENTERED AT 12:12:06 ON 03 OCT 2005
0 S L20

FILE 'STNGUIDE' ENTERED AT 12:18:29 ON 03 OCT 2005

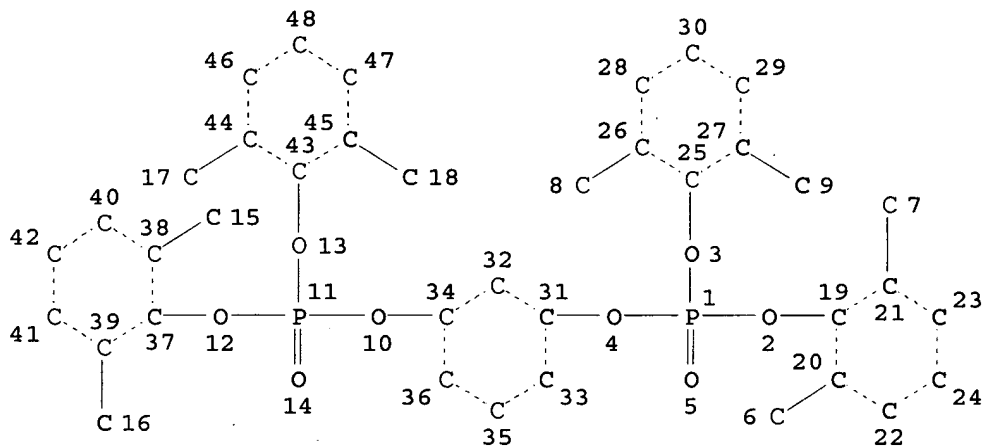
FILE 'HCAPLUS' ENTERED AT 12:30:50 ON 03 OCT 2005
L28 116 S L21 AND L23 AND (FIRE? OR FLAME? OR IGNIT?)
L29 0 S L25 AND L28
L30 0 S L25 AND 21
L31 1 S L25 AND L21
L32 0 S L25 AND L22
L33 110 S L28 AND COMPOSITION?
L34 108 S L33 AND ?RESIST?
L35 126 S L21 AND L23
L36 12495 S 35 (L) (FIRE? OR FLAME? OR IGNIT?)
L37 116 S L35 (L) (FIRE? OR FLAME? OR IGNIT?)
L38 1 S L34 AND LASER?
L39 59 S L34 AND POLYESTER
SAV L24 SSASTRI24/A
SAV L39 SSASTRI39/A
L40 25 S L28 AND HALOGEN-FREE
L41 27 S L28 AND HALO?-FREE
L42 22 S L41 NOT L24
L43 29 S L24 OR L41
L44 320197 S POLYESTER?
L45 79836 S PHENOL? (W) (?POLYMER? OR RESIN?)
L46 173947 S ACRYL? (W) (?POLYMER? OR RESIN?)
L47 8 S L3 AND L44 AND L45 AND L46
L48 1 S L25 AND L47
L49 14 S L24 OR L47
L50 35 S L49 OR L43
SET COST OFF

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que 150

L1 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 48

STEREO ATTRIBUTES: NONE

L3 2 SEA FILE=REGISTRY SSS FUL L1
 L5 312681 SEA FILE=REGISTRY PACR/PCT
 L6 188000 SEA FILE=REGISTRY PES/PCT
 L7 16145 SEA FILE=REGISTRY PR/PCT
 L17 312681 SEA FILE=REGISTRY L5 OR L5
 L18 162682 SEA FILE=REGISTRY RAN=(,160713-42-8) L5 OR L5
 L19 149999 SEA FILE=REGISTRY L17 NOT L18
 L21 255 SEA FILE=HCAPLUS L3 AND L6
 L22 72 SEA FILE=HCAPLUS L3 AND L7
 L23 313 SEA FILE=HCAPLUS L3 AND (L18 OR L19)
 L24 7 SEA FILE=HCAPLUS L21 AND L22 AND L23
 L28 116 SEA FILE=HCAPLUS L21 AND L23 AND (FIRE? OR FLAME? OR IGNIT?)
 L41 27 SEA FILE=HCAPLUS L28 AND HALO?-FREE
 L43 29 SEA FILE=HCAPLUS L24 OR L41
 L44 320197 SEA FILE=HCAPLUS POLYESTER?
 L45 79836 SEA FILE=HCAPLUS PHENOL? (W) (?POLYMER? OR RESIN?)
 L46 173947 SEA FILE=HCAPLUS ACRYL? (W) (?POLYMER? OR RESIN?)
 L47 8 SEA FILE=HCAPLUS L3 AND L44 AND L45 AND L46
 L49 14 SEA FILE=HCAPLUS L24 OR L47
 L50 35 SEA FILE=HCAPLUS L49 OR L43

=> d 150 bib abs ind hitstr 1-35

L50 ANSWER 1 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2005:545699 HCAPLUS

DN 143:60776

TI Fire-resistant resin compositions with good processing stability

IN Harashina, Hatsuhiko

PA Polyplastics Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 36 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2005162912	A2	20050623	JP 2003-405245	20031203

PRAI JP 2003-405245 20031203

AB Title compns. comprise (A) base resins, (B) alumina hydrate Al₂O₃·nH₂O, and (C) auxiliary flame retardants. Thus, a compn. comprising Duracon M 90-44 100, boehmite 5, Nova Excel 140 10, PR 53647 (phenolic resin) 20, and polytetrafluoroethylene 0.5 parts showed flame retardancy V-0.

IC ICM C08L101-00

ICS C08K003-02; C08K003-22; C08K003-38; C08K005-3492; C08K005-42; C08K005-52; C08K005-5415; C08L067-02

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 38

ST fire resistant resin compn processing stability; Duracon boehmite phenolic resin polytetrafluoroethylene compn

IT Amides, uses

Phosphates, uses

RL: MOA (Modifier or additive use); USES (Uses)
(amidophosphates, auxiliary flame retardant; fire-resistant resin compns. with good processing stability)

IT Polyphosphoric acids

RL: MOA (Modifier or additive use); USES (Uses)
(ammonium salts, Terraju C 70, auxiliary flame retardant; fire-resistant resin compns. with good processing stability)

IT Polyamides, uses

Polyesters, uses

RL: MOA (Modifier or additive use); USES (Uses)
(arom., auxiliary flame retardant; fire-resistant resin compns. with good processing stability)

IT Epoxy resins, uses

Oxides (inorganic), uses

Phenolic resins, uses

Phosphates, uses

Polycarbonates, uses

Polyoxyphenylenes

Polysiloxanes, uses

Polythiophenylenes

Zeolites (synthetic), uses

RL: MOA (Modifier or additive use); USES (Uses)
(auxiliary flame retardant; fire-resistant resin compns. with
good processing stability)

IT Polyphosphates
RL: MOA (Modifier or additive use); USES (Uses)
(derivs., auxiliary flame retardant; fire-resistant resin compns.
with good processing stability)

IT Phenolic resins, uses
RL: MOA (Modifier or additive use); USES (Uses)
(epoxy, novolak, auxiliary flame retardant; fire-resistant resin
compns. with good processing stability)

IT Fire-resistant materials
Fireproofing agents
(fire-resistant resin compns. with good processing stability)

IT Polyesters, properties
Polyoxymethylenes, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(fire-resistant resin compns. with good processing stability)

IT Molded plastics, properties
RL: PRP (Properties); TEM (Technical or engineered material use);
USES (Uses)
(fire-resistant resin compns. with good processing stability)

IT Polymer blends
RL: TEM (Technical or engineered material use); USES (Uses)
(fire-resistant resin compns. with good processing stability)

IT Phosphates, uses
RL: MOA (Modifier or additive use); USES (Uses)
(hydrogen, alk. earth metal, auxiliary flame retardant;
fire-resistant resin compns. with good processing stability)

IT Borates
Phosphites
RL: MOA (Modifier or additive use); USES (Uses)
(metal, auxiliary flame retardant; fire-resistant resin compns.
with good processing stability)

IT Phenolic resins, uses
RL: MOA (Modifier or additive use); USES (Uses)
(novolak, auxiliary flame retardant; fire-resistant resin compns.
with good processing stability)

IT Epoxy resins, uses
RL: MOA (Modifier or additive use); USES (Uses)
(phenolic, novolak, auxiliary flame retardant; fire-resistant
resin compns. with good processing stability)

IT Cyclophosphazenes
RL: MOA (Modifier or additive use); USES (Uses)
(phenoxy, auxiliary flame retardant; fire-resistant resin compns.
with good processing stability)

IT Sulfonic acids, uses
RL: MOA (Modifier or additive use); USES (Uses)
(salts, auxiliary flame retardant; fire-resistant resin compns.
with good processing stability)

IT Group IVA element compounds
RL: MOA (Modifier or additive use); USES (Uses)
(stannates, auxiliary flame retardant; fire-resistant resin
compns. with good processing stability)

IT 1318-23-6, BMT

RL: MOA (Modifier or additive use); USES (Uses)
 (BMT, BMF, flame retardant; fire-resistant resin compns. with good processing stability)

IT 25037-45-0 25134-01-4
 RL: MOA (Modifier or additive use); USES (Uses)
 (assumed monomers, auxiliary flame retardant; fire-resistant resin compns. with good processing stability)

IT 26062-94-2 26590-75-0, Polytrimethylene terephthalate
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; fire-resistant resin compns. with good processing stability)

IT 108-78-1D, Melamine, polyphosphate derivs. 1502-47-2, Melem 3576-88-3D, Melam, polyphosphate derivs. 22535-90-6, CTU Guanamine 24936-68-3, Panlite L 1225, uses 24938-67-8, YPX 100F 26590-50-1, U 100 26834-02-6, Milex XL 225 31870-48-1, CR 741 37640-57-6, MC 610 70785-76-1 81775-74-8, EPPN 201 84962-53-8, Apinon 901 113504-81-7 117313-45-8, Epikote 1004K 139189-30-3, PX 200 147263-99-8, PX 202 172827-17-7, Sumilit PR 53647 176316-86-2, Aluminum ethylmethylphosphinate 243144-78-7, PMP 100 364728-71-2, MMS 200 440088-13-1
 RL: MOA (Modifier or additive use); USES (Uses)
 (auxiliary flame retardant; fire-resistant resin compns. with good processing stability)

IT 380366-74-5, PMP 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire-resistant resin compns. with good processing stability)

IT 9003-53-6, Toyo Styrol G 19 9003-54-7, Cevian N 24968-12-5, Duranex 25038-59-9, Bellpet EFG 10, properties 26546-03-2, Polytrimethylene terephthalate 126730-46-9, Duracon M 90-44
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (fire-resistant resin compns. with good processing stability)

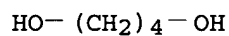
IT 1333-84-2, Alumina hydrate 1336-21-6D, Ammonium hydroxide, hydrated, composite with boehmite 1344-28-1, BMM, uses 24623-77-6, BMI (oxide) 63957-70-0D, Boehmite, composite with hydrated ammonium hydroxide
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardant; fire-resistant resin compns. with good processing stability)

IT 7723-14-0, Nova Excel 140, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (red, auxiliary flame retardant; fire-resistant resin compns. with good processing stability)

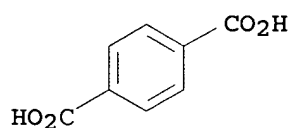
IT 26062-94-2 26590-75-0, Polytrimethylene terephthalate
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; fire-resistant resin compns. with good processing stability)

RN 26062-94-2 HCAPLUS
 CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

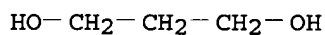
CM 1

CRN 110-63-4
CMF C4 H10 O2

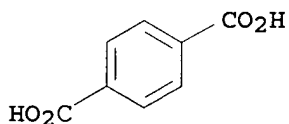
CM 2

CRN 100-21-0
CMF C8 H6 O4RN 26590-75-0 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, polymer with 1,3-propanediol (9CI)
(CA INDEX NAME)

CM 1

CRN 504-63-2
CMF C3 H8 O2

CM 2

CRN 100-21-0
CMF C8 H6 O4IT 26590-50-1, U 100 81775-74-8, EPPN 201
139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(auxiliary flame retardant; fire-resistant resin compns. with
good processing stability)

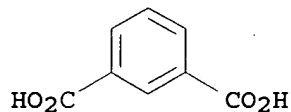
RN 26590-50-1 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5

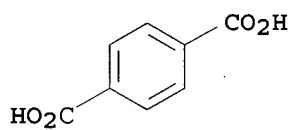
CMF C8 H6 O4



CM 2

CRN 100-21-0

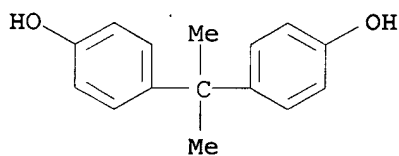
CMF C8 H6 O4



CM 3

CRN 80-05-7

CMF C15 H16 O2



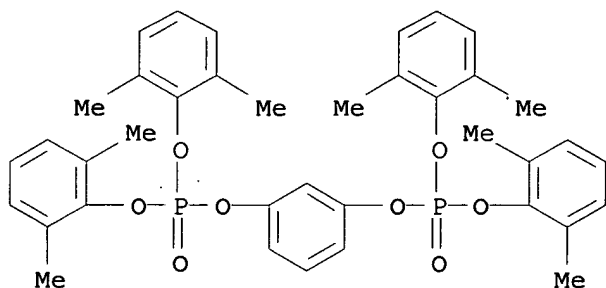
RN 81775-74-8 HCAPLUS

CN EPPN 201 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



IT 9003-54-7, Cevian N 24968-12-5, Duranex
 25038-59-9, Bellpet EFG 10, properties 26546-03-2,
 Polytrimethylene terephthalate
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (fire-resistant resin compns. with good processing stability)
 RN 9003-54-7 HCAPLUS
 CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

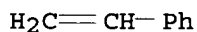
CM 1

CRN 107-13-1
 CMF C3 H3 N

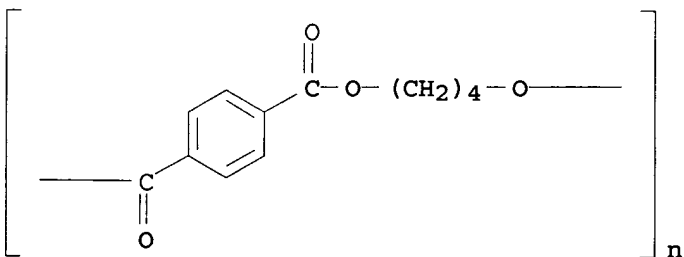


CM 2

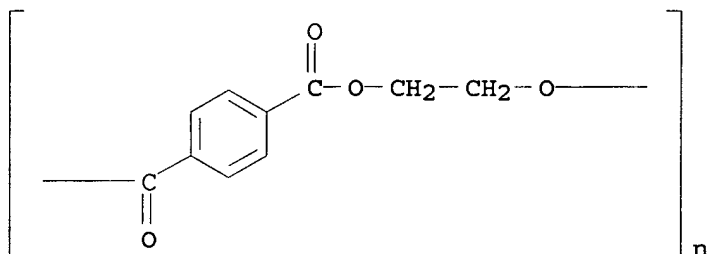
CRN 100-42-5
 CMF C8 H8



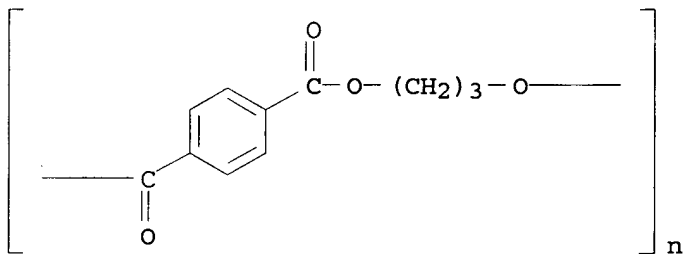
RN 24968-12-5 HCAPLUS
 CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
 INDEX NAME)



RN 25038-59-9 HCAPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 26546-03-2 HCAPLUS
 CN Poly(oxy-1,3-propanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



L50 ANSWER 2 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2005:33374 HCAPLUS

DN 142:115514

TI **Halogen-free** composite laminated boards with low thermal expansion

IN Okumura, Hiroya; Takeuchi, Hiroshi; Hirata, Isao; Nozue, Akiyoshi

PA Japan Composite Co., Ltd., Japan; Matsushita Electric Works, Ltd.

SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005007783	A2	20050113	JP 2003-175905	20030620

PRAI JP 2003-175905 20030620

OS MARPAT 142:115514

AB The laminated boards are prepd. by curing fiber-reinforced laminates of glass (non)woven fabrics impregnated with thermosetting resin

compos. comprising **halogen-free** radically polymerizable resins (a), thermoplastic resins (b), radically polymerizable monomers (c), **fireproofing** agents (d), and inorg. fillers (e) in amts. of (a) 10-75, (b) 2-30, (c) 20-60, and (d) 3-50 parts/100 parts (a) + (b) + (c), and that of (e) 20-80 parts/100 parts (a) + (b) + (c) for impregnation into woven fabrics and 120-300 parts/100 parts (a) + (b) + (c) for impregnation into nonwoven fabrics. Metal-clad laminates of the composite laminated boards for elec. are also claimed. Thus, a compn. of vinyl ester resin (YD 128 methacrylate) 60, unsatd. polyester (prepd. from maleic anhydride 391, propylene glycol 141, and styrene 649 g) 20, styrene 5, and an adipic acid-propylene glycol-ethylene glycol copolymer 15% was mixed with 25% PX 200 (phosphate ester), cumene hydroperoxide, and 40% (compd. 1) or 170% (compd. 2) Al(OH)₃ (CL 310). WE 18K-BS (glass fiber woven fabric) impregnated with compd. 1, 3 layers of Ep 4060 (glass fiber nonwoven fabric) impregnated with compd. 2, and WE 18K-BS impregnated with compd. 1 were laminated in this order, sandwiched with Cu foils (TSTO), and hot-pressed to give a Cu-clad laminate showing H₂O absorption 0.30%, linear expansion coeff. 18 ppm/°C, UL-94 **fire** resistance rating V0, and good soldering resistance.

IC ICM B32B017-04

CC ICS C08J005-04; C08K003-22; C08L085-02; C08L101-00; H05K001-03

38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 76

ST polyester blend thermosetting resin glass fabric laminate dimensional stability; copper clad laminate unsatd polyester vinyl ester resin; **fire** resistance nonhalogen composite laminate; water resistance copper clad laminate

IT Glass fiber fabrics

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(WE 18K-BS, Ep 4060, woven and nonwoven; **halogen-free** composite laminated boards with low thermal expansion)

IT Polyethers, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(acrylic-epoxy-polyester-; **halogen-free** composite laminated boards with low thermal expansion)

IT Polyesters, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(acrylic-epoxy-polyether-; **halogen-free** composite laminated boards with low thermal expansion)

IT Epoxy resins, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(acrylic-polyester-; **halogen-free** composite laminated boards with low thermal expansion)

IT Epoxy resins, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP

(Preparation); USES (Uses)
 (acrylic-polyester-polyether-; **halogen-free**
 composite laminated boards with low thermal expansion)

IT Nitrile rubber, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (carboxy-terminated, CTBN 1300X8; **halogen-free**
 composite laminated boards with low thermal expansion)

IT Printed circuit boards
 (copper-clad laminates; **halogen-free**
 composite laminated boards with low thermal expansion)

IT Reinforced plastics
 RL: PRP (Properties); TEM (Technical or engineered material use);
 USES (Uses)
 (glass fiber-reinforced; **halogen-free**
 composite laminated boards with low thermal expansion)

IT **Fire-resistant materials**
Fireproofing agents
 (**halogen-free** composite laminated boards with
 low thermal expansion)

IT Polyesters, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); PREP
 (Preparation); USES (Uses)
 (**halogen-free** composite laminated boards with
 low thermal expansion)

IT Laminated plastics, uses
 RL: PRP (Properties); TEM (Technical or engineered material use);
 USES (Uses)
 (**halogen-free** composite laminated boards with
 low thermal expansion)

IT 21645-51-2, CL 310, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (filler; **halogen-free** composite laminated
 boards with low thermal expansion)

IT 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fireproofing agent**; **halogen-free**
 composite laminated boards with low thermal expansion)

IT 7440-50-8, TSTO, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (foils, laminates; **halogen-free** composite
 laminated boards with low thermal expansion)

IT 26523-14-8P, Adipic acid-ethylene glycol-propylene glycol
 copolymer 52007-86-0P, Azelaic acid-ethylene
 glycol-neopentyl glycol-terephthalic acid copolymer
 64253-34-5P, Azelaic acid-ethylene glycol-isophthalic
 acid-neopentyl glycol-terephthalic acid copolymer
 103413-65-6P, Maleic anhydride-propylene glycol-styrene-YD
 128 methacrylate copolymer 820234-06-8P, Dipropylene
 glycol-maleic anhydride-propylene glycol-styrene-YD 128 methacrylate
 copolymer 820234-07-9P, Dipropylene glycol-maleic
 anhydride-propylene glycol-styrene-YD 128 methacrylate-YD 901
 methacrylate copolymer 820234-08-0P, Maleic
 anhydride-propylene glycol-styrene-YD 128 methacrylate-YD 901
 methacrylate copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(**halogen-free** composite laminated boards with low thermal expansion)

IT 144820-12-2P, Allyl methacrylate-butyl acrylate-1,4-butylene glycol diacrylate-ethyl acrylate-2-hydroxyethyl methacrylate-methyl methacrylate graft copolymer

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)

(multilayer, particles; **halogen-free** composite laminated boards with low thermal expansion)

IT 9003-18-3D, carboxy-terminated

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(nitrile rubber, CTBN 1300X8; **halogen-free** composite laminated boards with low thermal expansion)

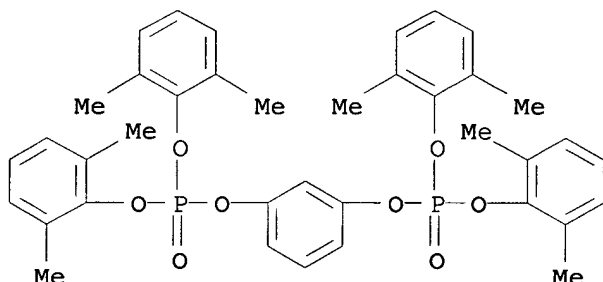
IT 139189-30-3, PX 200

RL: MOA (Modifier or additive use); USES (Uses)

(**fireproofing** agent; **halogen-free** composite laminated boards with low thermal expansion)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



IT 26523-14-8P, Adipic acid-ethylene glycol-propylene glycol copolymer 52007-86-0P, Azelaic acid-ethylene glycol-neopentyl glycol-terephthalic acid copolymer 64253-34-5P, Azelaic acid-ethylene glycol-isophthalic acid-neopentyl glycol-terephthalic acid copolymer 103413-65-6P, Maleic anhydride-propylene glycol-styrene-YD 128 methacrylate copolymer 820234-06-8P, Dipropylene glycol-maleic anhydride-propylene glycol-styrene-YD 128 methacrylate copolymer 820234-07-9P, Dipropylene glycol-maleic anhydride-propylene glycol-styrene-YD 128 methacrylate-YD 901 methacrylate copolymer 820234-08-0P, Maleic anhydride-propylene glycol-styrene-YD 128 methacrylate-YD 901 methacrylate copolymer

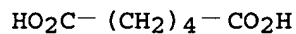
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(**halogen-free** composite laminated boards with low thermal expansion)

RN 26523-14-8 HCAPLUS
CN Hexanedioic acid, polymer with 1,2-ethanediol and 1,2-propanediol
(9CI) (CA INDEX NAME)

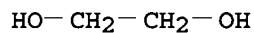
CM 1

CRN 124-04-9
CMF C6 H10 O4



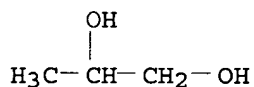
CM 2

CRN 107-21-1
CMF C2 H6 O2



CM 3

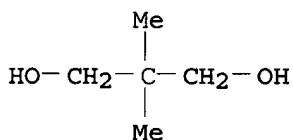
CRN 57-55-6
CMF C3 H8 O2



RN 52007-86-0 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, polymer with 2,2-dimethyl-1,3-propanediol, 1,2-ethanediol and nonanedioic acid (9CI) (CA INDEX NAME)

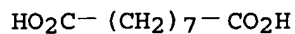
CM 1

CRN 126-30-7
CMF C5 H12 O2



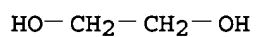
CM 2

CRN 123-99-9
CMF C9 H16 O4



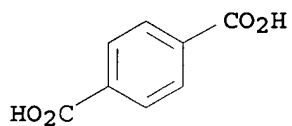
CM 3

CRN 107-21-1
CMF C2 H6 O2



CM 4

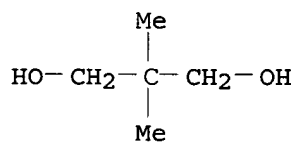
CRN 100-21-0
CMF C8 H6 O4



RN 64253-34-5 HCAPLUS
CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid, 2,2-dimethyl-1,3-propanediol, 1,2-ethanediol and nonanedioic acid (9CI) (CA INDEX NAME)

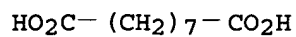
CM 1

CRN 126-30-7
CMF C5 H12 O2



CM 2

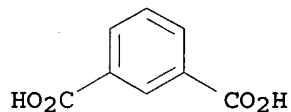
CRN 123-99-9
CMF C9 H16 O4



CM 3

CRN 121-91-5

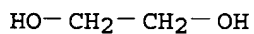
CMF C8 H6 O4



CM 4

CRN 107-21-1

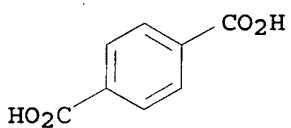
CMF C2 H6 O2



CM 5

CRN 100-21-0

CMF C8 H6 O4



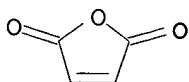
RN 103413-65-6 HCAPLUS

CM 2,5-Furandione, polymer with ethenylbenzene, 4,4'-(1-methylethylidene)bis[phenol] polymer with (chloromethyl)oxirane 2-methyl-2-propenoate, and 1,2-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 108-31-6

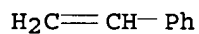
CMF C4 H2 O3



CM 2

CRN 100-42-5

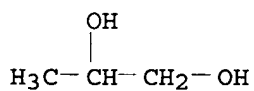
CMF C8 H8



CM 3

CRN 57-55-6

CMF C3 H8 O2



CM 4

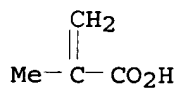
CRN 61970-25-0

CMF (C15 H16 O2 . C3 H5 Cl O)x . x C4 H6 O2

CM 5

CRN 79-41-4

CMF C4 H6 O2



CM 6

CRN 25068-38-6

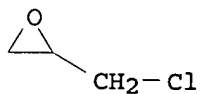
CMF (C15 H16 O2 . C3 H5 Cl O)x

CCI PMS

CM 7

CRN 106-89-8

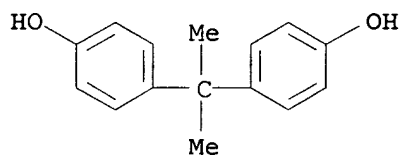
CMF C3 H5 Cl O



CM 8

CRN 80-05-7

CMF C15 H16 O2



RN 820234-06-8 HCAPLUS

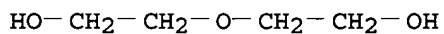
CN 2,5-Furandione, polymer with (chloromethyl)oxirane polymer with 4,4'-(1-methylethylidene)bis[phenol] 2-methyl-2-propenoate, ethenylbenzene, oxybis[propanol] and 1,2-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 25265-71-8

CMF C6 H14 O3

CCI IDS

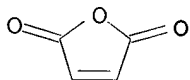


2 (D1-Me)

CM 2

CRN 108-31-6

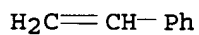
CMF C4 H2 O3



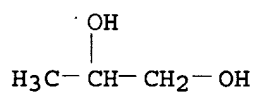
CM 3

CRN 100-42-5

CMF C8 H8



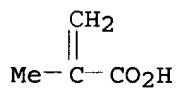
CM 4

CRN 57-55-6
CMF C3 H8 O2

CM 5

CRN 61970-25-0
CMF (C15 H16 O2 . C3 H5 Cl O)x . x C4 H6 O2

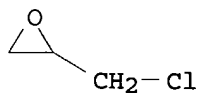
CM 6

CRN 79-41-4
CMF C4 H6 O2

CM 7

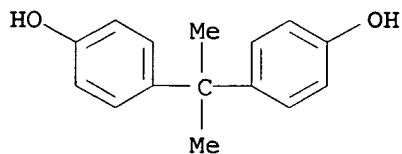
CRN 25068-38-6
CMF (C15 H16 O2 . C3 H5 Cl O)x
CCI PMS

CM 8

CRN 106-89-8
CMF C3 H5 Cl O

CM 9

CRN 80-05-7
CMF C15 H16 O2



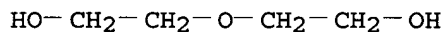
RN 820234-07-9 HCAPLUS
 CN 2,5-Furandione, polymer with (chloromethyl)oxirane polymer with
 4,4'-(1-methylethylidene)bis[phenol] 2-methyl-2-propenoate,
 ethenylbenzene, 2,2'-[(1-methylethylidene)bis(4,1-
 phenyleneoxymethylene)]bis[oxirane] homopolymer 2-methyl-2-
 propenoate, oxybis[propanol] and 1,2-propanediol (9CI) (CA INDEX
 NAME)

CM 1

CRN 25265-71-8

CMF C6 H14 O3

CCI IDS

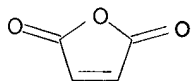


2 (D1-Me)

CM 2

CRN 108-31-6

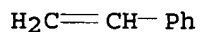
CMF C4 H2 O3



CM 3

CRN 100-42-5

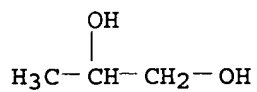
CMF C8 H8



CM 4

CRN 57-55-6

CMF C3 H8 O2



CM 5

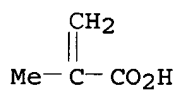
CRN 61970-25-0

CMF (C15 H16 O2 . C3 H5 Cl O)x . x C4 H6 O2

CM 6

CRN 79-41-4

CMF C4 H6 O2



CM 7

CRN 25068-38-6

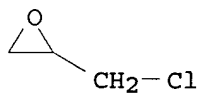
CMF (C15 H16 O2 . C3 H5 Cl O)x

CCI PMS

CM 8

CRN 106-89-8

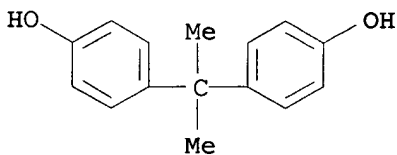
CMF C3 H5 Cl O



CM 9

CRN 80-05-7

CMF C15 H16 O2



CM 10

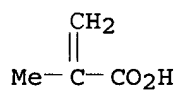
CRN 39290-46-5

CMF (C21 H24 O4)x . x C4 H6 O2

CM 11

CRN 79-41-4

CMF C4 H6 O2



CM 12

CRN 25085-99-8

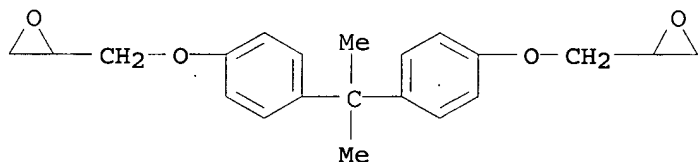
CMF (C21 H24 O4)x

CCI PMS

CM 13

CRN 1675-54-3

CMF C21 H24 O4



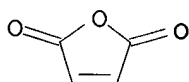
RN 820234-08-0 HCAPLUS

CN 2,5-Furandione, polymer with (chloromethyl)oxirane polymer with 4,4'-(1-methylethylidene)bis[phenol] 2-methyl-2-propenoate, ethenylbenzene, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] homopolymer 2-methyl-2-propenoate and 1,2-propanediol (9CI) (CA INDEX NAME)

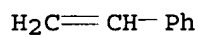
CM 1

CRN 108-31-6

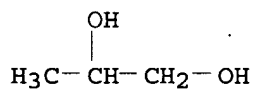
CMF C4 H2 O3



CM 2

CRN 100-42-5
CMF C8 H8

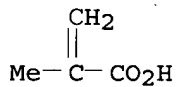
CM 3

CRN 57-55-6
CMF C3 H8 O2

CM 4

CRN 61970-25-0
CMF (C15 H16 O2 . C3 H5 Cl O)x . x C4 H6 O2

CM 5

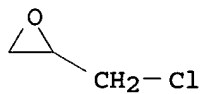
CRN 79-41-4
CMF C4 H6 O2

CM 6

CRN 25068-38-6
CMF (C15 H16 O2 . C3 H5 Cl O)x
CCI PMS

CM 7

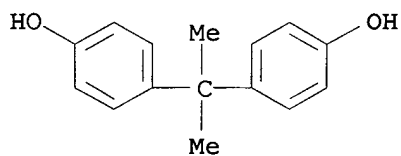
CRN 106-89-8
CMF C3 H5 Cl O



CM 8

CRN 80-05-7

CMF C15 H16 O2



CM 9

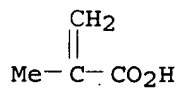
CRN 39290-46-5

CMF (C21 H24 O4)x . x C4 H6 O2

CM 10

CRN 79-41-4

CMF C4 H6 O2



CM 11

CRN 25085-99-8

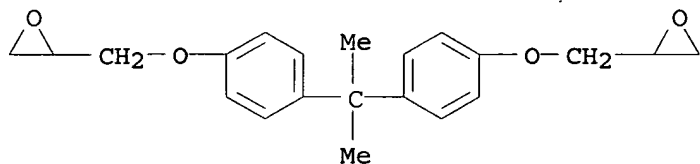
CMF (C21 H24 O4)x

CCI PMS

CM 12

CRN 1675-54-3

CMF C21 H24 O4



IT 144820-12-2P, Allyl methacrylate-butyl acrylate-1,4-butylene glycol diacrylate-ethyl acrylate-2-hydroxyethyl methacrylate-methyl methacrylate graft copolymer

RL: IMF (Industrial manufacture); MOA (Modifier or additive use);

PREP (Preparation); USES (Uses)

(multilayer, particles; **halogen-free**

composite laminated boards with low thermal expansion)

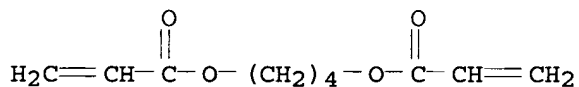
RN 144820-12-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with 1,4-butanediyl di-2-propenoate, butyl 2-propenoate, ethyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenyl 2-methyl-2-propenoate, graft (9CI) (CA INDEX NAME)

CM 1

CRN 1070-70-8

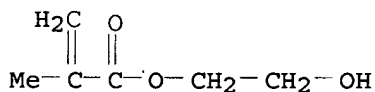
CMF C10 H14 O4



CM 2

CRN 868-77-9

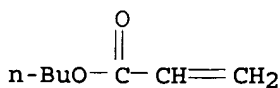
CMF C6 H10 O3



CM 3

CRN 141-32-2

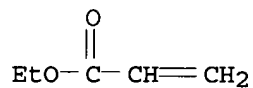
CMF C7 H12 O2



CM 4

CRN 140-88-5

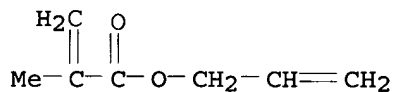
CMF C5 H8 O2



CM 5

CRN 96-05-9

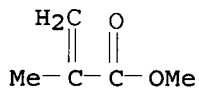
CMF C7 H10 O2



CM 6

CRN 80-62-6

CMF C5 H8 O2



IT 9003-18-3D, carboxy-terminated
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (nitrile rubber, CTBN 1300X8; halogen-free composite laminated boards with low thermal expansion)
 RN 9003-18-3 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

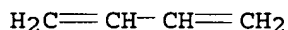
CRN 107-13-1

CMF C3 H3 N



CM 2

CRN 106-99-0
CMF C4 H6



L50 ANSWER 3 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:698186 HCAPLUS
DN 141:226377
TI **Halogen-free ignition-resistant**
thermoplastic resin compositions containing modified multifunctional
epoxy resins
IN Gan, Joseph; King, Bruce A.; Rego, Jose M.; Youngson, Chris G.
PA Dow Global Technologies Inc., USA
SO PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004072179	A1	20040826	WO 2003-US11408	20030415

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2003-445638P P 20030206
AB The compn. comprises (A) a thermoplastic polymer or polymer blend, (B) a modified multifunctional epoxy resin contg. 0-20% (based on the total wt. of the epoxy resin) residual epoxy groups, and (C) a phosphorus-contg. compd. The modified multifunctional epoxy compd. enhances the **flame** retardancy of the thermoplastic polymer, increase the compatibility of the epoxy resin with the thermoplastic polymer without causing black specks in the final product, and improved mech. properties, melt flow rate and processability. Thus, a compn. comprising high-impact polystyrene 55, polyphenylene oxide 22, FP 500 (diphosphate) 18, an epoxy resin prepd. from Den 438 (epoxy novolak) and 2-phenylphenol 5 parts showed melt flow rate 5.6 g/a0 min, elongation 19% and UL 94 **fire** resistance rating V-0.
IC ICM C08L051-04
ICS C08K005-523
CC 37-6 (Plastics Manufacture and Processing)

ST epoxy resin modified thermoplastic **ignition** resistance;
high impact polystyrene polyphenylene oxide blend; phosphorus compd
fireproofing agent thermoplastic compn

IT **Fire-resistant materials**
Fireproofing agents
(**halogen-free ignition**-resistant
thermoplastic resin compns. contg. modified multifunctional epoxy
resins)

IT Polycarbonates, uses
Polyesters, uses
Polyolefins
Polyoxyphenylenes
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(**halogen-free ignition**-resistant
thermoplastic resin compns. contg. modified multifunctional epoxy
resins)

IT Molded plastics, uses
Polymer blends
RL: TEM (Technical or engineered material use); USES (Uses)
(**halogen-free ignition**-resistant
thermoplastic resin compns. contg. modified multifunctional epoxy
resins)

IT Polyolefins
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(interpolymers with carbon monoxide; **halogen-**
free ignition-resistant thermoplastic resin
compns. contg. modified multifunctional epoxy resins)

IT Epoxy resins, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(modified; **halogen-free ignition**
-resistant thermoplastic resin compns. contg. modified
multifunctional epoxy resins)

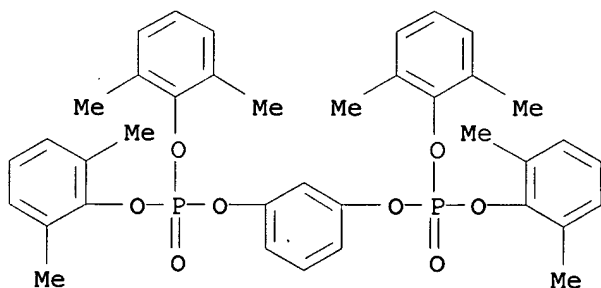
IT Vinyl compounds, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(polymers, arom.; **halogen-free**
ignition-resistant thermoplastic resin compns. contg.
modified multifunctional epoxy resins)

IT Cycloalkenes
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(polymers; **halogen-free ignition**
-resistant thermoplastic resin compns. contg. modified
multifunctional epoxy resins)

IT Plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(thermoplastics; **halogen-free**
ignition-resistant thermoplastic resin compns. contg.
modified multifunctional epoxy resins)

IT Aromatic compounds
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(vinyl, polymers; **halogen-free**

- ignition-resistant thermoplastic resin compns. contg.
modified multifunctional epoxy resins)
- IT 7664-38-2D, Phosphoric acid, aryl esters
RL: MOA (Modifier or additive use); USES (Uses)
(fireproofing agent; halogen-free
ignition-resistant thermoplastic resin compns. contg.
modified multifunctional epoxy resins)
- IT 139189-30-3, FP 500
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(fireproofing agent; halogen-free
ignition-resistant thermoplastic resin compns. contg.
modified multifunctional epoxy resins)
- IT 630-08-0D, Carbon monoxide, interpolymers with polyolefins
9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9
, ABS 9010-77-9, Acrylic acid-ethylene copolymer
9041-80-9, Polyphenylene oxide 25038-59-9, Poly(ethylene
terephthalate), uses 25067-34-9, Ethylene-vinyl alcohol copolymer
25085-99-8, Bisphenol A diglycidyl ether polymer 106107-54-4,
Butadiene-styrene block copolymer 348625-88-7D, diglycidyl ether
744209-80-1
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(halogen-free ignition-resistant
thermoplastic resin compns. contg. modified multifunctional epoxy
resins)
- IT 9003-53-6
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(impact-resistant; halogen-free
ignition-resistant thermoplastic resin compns. contg.
modified multifunctional epoxy resins)
- IT 139189-30-3, FP 500
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(fireproofing agent; halogen-free
ignition-resistant thermoplastic resin compns. contg.
modified multifunctional epoxy resins)
- RN 139189-30-3 HCAPLUS
CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



- IT 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9

, ABS 9010-77-9, Acrylic acid-ethylene copolymer
25038-59-9, Poly(ethylene terephthalate), uses
744209-80-1

RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)

(halogen-free ignition-resistant
thermoplastic resin compns. contg. modified multifunctional epoxy
resins)

RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

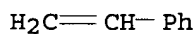
CMF C3 H3 N



CM 2

CRN 100-42-5

CMF C8 H8



RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

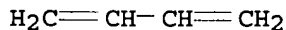
CMF C3 H3 N



CM 2

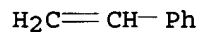
CRN 106-99-0

CMF C4 H6



CM 3

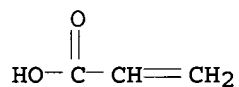
CRN 100-42-5
CMF C8 H8



RN 9010-77-9 HCAPLUS
CN 2-Propenoic acid, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 79-10-7
CMF C3 H4 O2

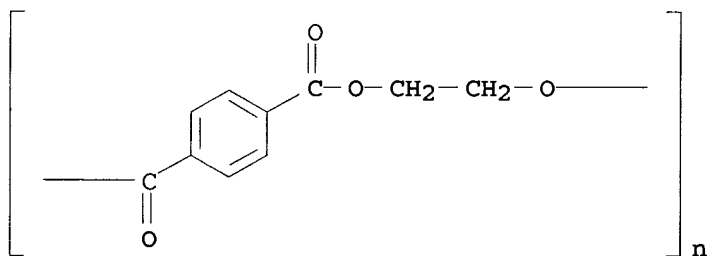


CM 2

CRN 74-85-1
CMF C2 H4



RN 25038-59-9 HCAPLUS
CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 744209-80-1 HCAPLUS
CN [1,1'-Biphenyl]-2-ol, polymer with DEN 438 (9CI) (CA INDEX NAME)

CM 1

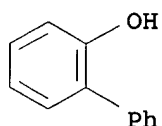
CRN 63957-64-2
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 90-43-7

CMF C12 H10 O



L50 ANSWER 4 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:698179 HCAPLUS

DN 141:207984

TI **Halogen-free ignition-resistant**
thermoplastic resin compositions

IN Gan, Joseph; King, Bruce; Rego, Jose M.; Youngson, Chris G.

PA Dow Global Technologies Inc., USA

SO PCT Int. Appl., 24 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004072170	A2	20040826	WO 2004-US3499	20040206

WO 2004072170 A3 20041118

W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ, MZ, NA, NI

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2003-445638P P 20030206

AB Title **halogen-free ignition-resistant**

polymer compn. comprises: (A) a thermoplastic polymer or polymer blend, (B) a modified multi-functional epoxy resin contg. from 0-20 wt% residual epoxy groups, based on the total wt. of the epoxy resin, and (C) a phosphorus contg. compd. The use of a modified multifunctional epoxy compd. having from 0-20 wt% residual epoxy groups, enhances the **flame** retardancy of the thermoplastic polymer, and can increase the compatibility of the epoxy resin with

the thermoplastic polymer through the use of the modified functionalities, without causing black specks in the final product. It has been addnl. discovered that modified multi-functional epoxy resins can also contribute to improved mech. properties, melt flow rate and processability.

- IC ICM C08L
- CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 38
- ST **halogen free ignition** resistant
thermoplastic epoxy resin compn
- IT Phenolic resins, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(epoxy, novolak; prodn. of **halogen-free ignition**-resistant thermoplastic resin compns.)
- IT Polyphosphates
RL: MOA (Modifier or additive use); USES (Uses)
(**fire** retardant; prodn. of **halogen-free ignition**-resistant thermoplastic resin compns.)
- IT Epoxy resins, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(phenolic, novolak; prodn. of **halogen-free ignition**-resistant thermoplastic resin compns.)
- IT Impact-resistant materials
(polystyrene; prodn. of **halogen-free ignition**-resistant thermoplastic resin compns.)
- IT **Fire**-resistant materials
(prodn. of **halogen-free ignition**-resistant thermoplastic resin compns.)
- IT Polymer blends
Polyoxyphenylenes
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(prodn. of **halogen-free ignition**-resistant thermoplastic resin compns.)
- IT Polycarbonates, uses
Polyesters, uses
Polyolefins
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(prodn. of **halogen-free ignition**-resistant thermoplastic resin compns.)
- IT Plastics, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(thermoplastics; prodn. of **halogen-free ignition**-resistant thermoplastic resin compns.)
- IT 5945-33-5, Bisphenol A bis(diphenyl phosphate) 57583-54-7, Resorcinol bis(diphenyl phosphate)
RL: MOA (Modifier or additive use); USES (Uses)
(**fire** retardant; prodn. of **halogen-free ignition**-resistant thermoplastic resin compns.)
- IT 90-43-7, 2-Phenylphenol

RL: MOA (Modifier or additive use); USES (Uses)
 (impact-resistant; prodn. of **halogen-free**
ignition-resistant thermoplastic resin compns.)

IT 9003-53-6
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (impact-resistant; prodn. of **halogen-free**
ignition-resistant thermoplastic resin compns.)

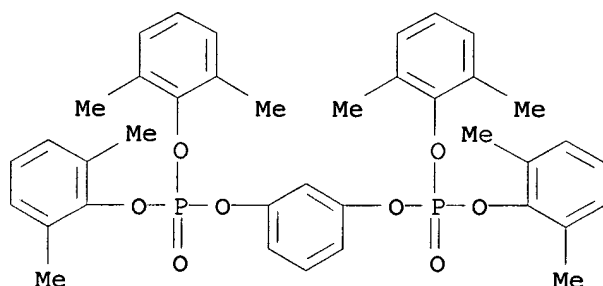
IT 139189-30-3, FP 500
 RL: MOA (Modifier or additive use); USES (Uses)
 (prodn. of **halogen-free ignition**
 -resistant thermoplastic resin compns.)

IT 63957-64-2, DEN 438 744245-36-1, N 2245
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (prodn. of **halogen-free ignition**
 -resistant thermoplastic resin compns.)

IT 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9
 , Acrylonitrile-butadiene-styrene copolymer 9010-77-9,
 Acrylic acid-ethylene copolymer 24937-78-8, EVA 25038-59-9
 , PET polymer, uses 106107-54-4, Styrene-butadiene block copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (prodn. of **halogen-free ignition**
 -resistant thermoplastic resin compns.)

IT 139189-30-3, FP 500
 RL: MOA (Modifier or additive use); USES (Uses)
 (prodn. of **halogen-free ignition**
 -resistant thermoplastic resin compns.)

RN 139189-30-3 HCAPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



IT 63957-64-2, DEN 438
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (prodn. of **halogen-free ignition**
 -resistant thermoplastic resin compns.)

RN 63957-64-2 HCAPLUS
 CN DEN 438 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9

, Acrylonitrile-butadiene-styrene copolymer 9010-77-9,
Acrylic acid-ethylene copolymer 25038-59-9, PET polymer,
uses

RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)

(prodn. of halogen-free ignition
-resistant thermoplastic resin compns.)

RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

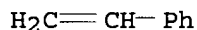
CMF C3 H3 N



CM 2

CRN 100-42-5

CMF C8 H8



RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

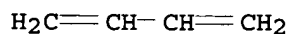
CMF C3 H3 N



CM 2

CRN 106-99-0

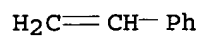
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



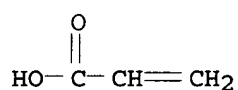
RN 9010-77-9 HCAPLUS

CN 2-Propenoic acid, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 79-10-7

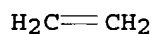
CMF C3 H4 O2



CM 2

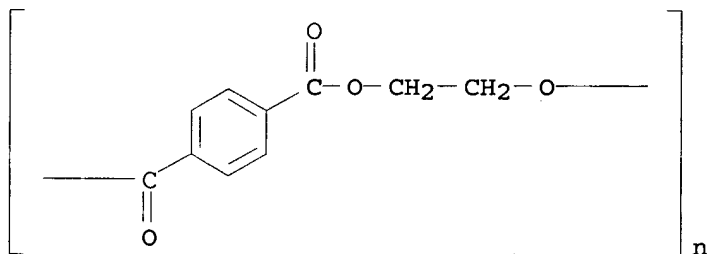
CRN 74-85-1

CMF C2 H4



RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



L50 ANSWER 5 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:612144 HCAPLUS

DN 141:141569

TI Fire-resistant resin compositions, their manufacture, and their moldings with suppressed mold deposition and bleed out of fireproofing agents

IN Harashina, Hatsuhiro

PA Polyplastics Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 54 pp.

CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004210882	A2	20040729	JP 2002-379984	20021227

PRAI JP 2002-379984 20021227

AB The compns., useful for electronic parts, OA equipment, elec. appliances, automobile parts, and machinery parts, contain base polymers, cyano-contg. heterocyclic compds., and P compds., arom. polymers, N compds., inorg. metal compds., S compds., and/or Si compds. Thus, a test piece contg. Duranex (PBT) 100, tris(2-cyanoethyl) isocyanurate 10, and Novaexcel 140 (red P) 8 parts showed fire resistance (UL 94) V-0 and no blooming.

IC ICM C08L101-00
 ICS C08K003-00; C08K005-00

CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 37

ST fire resistance molding PBT cyanoethyl isocyanurate; cyano heterocycle fireproofing agent bleeding prevention; mold deposition prevention polystyrene phosphate

IT Polysiloxanes, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (DC 4-7015, fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)

IT Zeolite 3A
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (Zeolite A 3, fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)

IT Polyamides, uses
 Polycarbonates, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (arom., fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)

IT Polyoxyphenylenes
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (base polymer or fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)

IT Electric apparatus
 Fire-resistant materials
 Fireproofing agents
 Machinery parts
 (fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed

- out of fireproofing agents)
- IT **Acrylic polymers**, uses
Polyamides, uses
Polycarbonates, uses
Polyesters, uses
Polyolefins
Polyoxymethylenes, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT **Molded plastics**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT **Epoxy resins**, uses
Polythiophenylenes
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT **Polybenzyls**
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(hydroxy-contg., fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT **Phenolic resins**, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(novolak, fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT **Automobiles**
(parts; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT **Polyphosphazenes**
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(phenoxy, fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT **24936-68-3, Panlite L 1225**, uses
RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(Iupilon S 3000, base polymer or fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT **25134-01-4**
RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

- (assumed monomers, base polymer or fireproofing aid;
fire-resistant resin compns. contg. cyano-contg. heterocyclic
compds. for moldings with suppressed mold deposition and bleed
out of fireproofing agents)
- IT 25068-38-6, Bisphenol A-epichlorohydrin copolymer
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(assumed monomers, fireproofing aid; fire-resistant resin compns.
contg. cyano-contg. heterocyclic compds. for moldings with
suppressed mold deposition and bleed out of fireproofing agents)
- IT 25037-45-0 26062-94-2 30580-17-7, 1,4-Butanediol-isophthalic
acid-terephthalic acid copolymer 55097-77-3, 1,4-Butanediol-
isophthalic acid-terephthalic acid copolymer, sru 88859-97-6
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(assumed monomers; fire-resistant resin compns. contg.
cyano-contg. heterocyclic compds. for moldings with suppressed
mold deposition and bleed out of fireproofing agents)
- IT 24938-67-8, YPX 100F
RL: MOA (Modifier or additive use); POF (Polymer in formulation);
TEM (Technical or engineered material use); USES (Uses)
(base polymer or fireproofing aid; fire-resistant resin compns.
contg. cyano-contg. heterocyclic compds. for moldings with
suppressed mold deposition and bleed out of fireproofing agents)
- IT 9003-53-6, Toyo Styrol G 19 9003-54-7, Cevian JD 9003-56-9,
Cevian DP 611 24968-12-5, Duranex 25038-54-4, Ube Nylon 6, uses
25038-59-9, Bellpet EFG 10, uses 25822-54-2, Rodrun LC 3000
81843-52-9, Vectra A 950 126730-46-9, Duracon M 90-44
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(fire-resistant resin compns. contg. cyano-contg. heterocyclic
compds. for moldings with suppressed mold deposition and bleed
out of fireproofing agents)
- IT 2904-27-0, Bis(2-cyanoethyl) isocyanurate 2904-28-1 3058-04-6,
3,9-Bis(2-cyanoethyl)-2,4,8,10-tetraoxaspiro[5.5]undecane
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(fireproofing agent; fire-resistant resin compns. contg.
cyano-contg. heterocyclic compds. for moldings with suppressed
mold deposition and bleed out of fireproofing agents)
- IT 110-21-4, Biurea 461-58-5, Dicyandiamide 1309-42-8, Kisuma 5E
1449-89-4 5945-33-5, Bisphenol A bis(diphenyl phosphate)
7757-93-9, Calcium hydrogen phosphate 9003-53-6D, Polystyrene,
sulfonated, sodium salt 12767-90-7, Firebrake ZB 22535-90-6,
CTU-Guanamine 24979-70-2, Maruka Lyncur M-S 1P 25212-74-2,
Poly(1,4-phenylene sulfide) 26590-50-1, Polyarylate U 100
26834-02-6, Milex XL 225 34670-63-8 36240-31-0,
10-Hydroxy-9,10-dihydro-9-oxa-10-phosphaphenanthrene-10-oxide
37640-57-6, MC 610 39281-59-9 117313-45-8, Epikote 1004K
139189-30-3, Resorcinol bis(di-2,6-xylyl phosphate)
172827-17-7, Sumilit PR 53647 176316-86-2, Aluminum
ethylmethylphosphinate 178965-58-7 380366-74-5, PMP 200
725268-23-5
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(fireproofing aid; fire-resistant resin compns. contg.

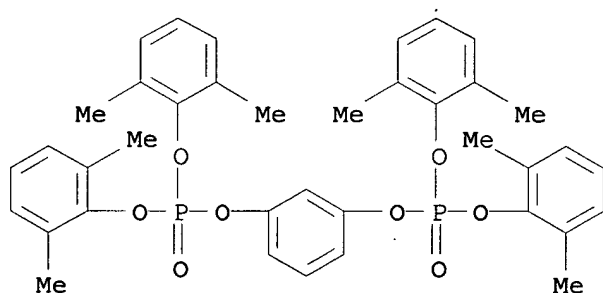
cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)

IT 7723-14-0, Novaexcel 140, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (red, fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)

IT 139189-30-3, Resorcinol bis(di-2,6-xylyl phosphate)
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



L50 ANSWER 6 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:605702 HCAPLUS

DN 141:157927

TI Guanamine compounds, their manufacture, and fire-resistant polymer compositions and moldings with good bleed-out resistance

IN Harashina, Hatsuhiko

PA Polyplastics Co., Ltd., Japan

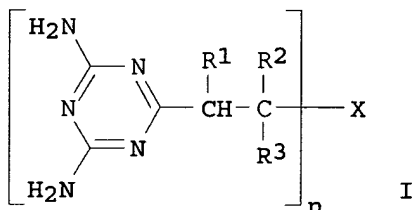
SO Jpn. Kokai Tokkyo Koho, 35 pp.
 CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004210640	A2	20040729	JP 2002-378455	20021226
PRAI	JP 2002-378455		20021226		
OS	MARPAT 141:157927				
GI					



- AB Title guanamine compds. I (R1-R3 = H, alkyl; X = residue of OH compds. or thiols, O, S; n = 1-6) are manufd. by reaction of (YR1CHCR2R3)nX (R1-R3, X, n = same as in I; Y = nitrile, X1CO; X1 = OH, Cl, alkoxy, aryloxy) and dicyandiamide or biguanides in the presence or absence of basic catalysts. Salts of I are manufd. by reaction of I and N-contg. cyclic compds. having OH groups. Thus, Duracon M 90-44 (polyacetal copolymer), bis[β-(2,4-diamino-s-triazin-6-yl)ethyl] ether, Irganox 245 [triethylene glycol bis[3-(3-tert-butyl-5-methyl-4-hydroxyphenyl)] propionate], and Ca 12-hydroxystearate were kneaded and press molded to give a test piece showing **fire retardance V-1 (UL 94)**.
- IC ICM C07D251-18
ICS C08K005-3477; C08L101-00
- CC 37-6 (Plastics Manufacture and Processing)
- ST guanamine **fireproofing** agent bleed out resistance;
moldability guanamine **fireproofing** agent polymer blend;
halogen free fireproofing agent
guanamine
- IT Zeolite 3A
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(Zeolum A 3, **fireproofing** agents; manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT Phenolic resins, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(aralkyl; manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT Glass fibers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(chopped, fillers; manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT **Fire-resistant materials**
Fireproofing agents
(manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)

- IT Epoxy resins, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT Polyamides, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT Polycarbonates, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT Polyesters, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT Polyoxyphenylenes
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT Phenolic resins, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(novolak; manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT Polyphosphazenes
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(oligomeric, phenoxy derivs., **fireproofing** agents; manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT 9003-56-9, Acrylonitrile-butadiene-styrene copolymer
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(Cevian DP 61; manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT 7723-14-0, Phosphorus, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(Novaexcel 140, Novaexcel F 5, **fireproofing** agents; manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT 24938-67-8, Poly(2,6-dimethyl-1,4-phenylene oxide), sru
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(PPE-Polymer YPX 100F; manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)
- IT 24936-68-3, Panlite L 1225, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

material use); USES (Uses)
(Panlite L 1225, Iupilon S 3000; manuf. of guanamine compds. as
fireproofing agents for polymer compns. with good
bleed-out resistance)

IT 6683-19-8, Irganox 1010 36443-68-2, Irganox 245
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(antioxidants; manuf. of guanamine compds. as
fireproofing agents for polymer compns. with good
bleed-out resistance)

IT 25037-45-0 25134-01-4, Poly(2,6-dimethyl-1,4-phenylene oxide)
25718-70-1 **26062-94-2 30580-17-7**,
1,4-Butanediol-isophthalic acid-terephthalic acid copolymer
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(assumed monomers; manuf. of guanamine compds. as
fireproofing agents for polymer compns. with good
bleed-out resistance)

IT 9002-84-0, Polytetrafluoroethylene
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(dripping-preventing agents; manuf. of guanamine compds. as
fireproofing agents for polymer compns. with good
bleed-out resistance)

IT 14807-96-6, Talc 3A, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(fillers; manuf. of guanamine compds. as **fireproofing**
agents for polymer compns. with good bleed-out resistance)

IT 108-78-1, Melamine, uses 110-21-4, Biurea 1309-42-8, Kisuma 5E
5945-33-5, Bisphenol A bis(diphenyl phosphate) 7757-93-9, Calcium
hydrogenphosphate 7789-79-9, Calcium hypophosphite 9003-53-6D,
Polystyrene, sulfonated, sodium salts 12767-90-7,
Firebrake ZB 22535-90-6, CTU-guanamine 113089-04-6
139189-30-3, PX 200 176316-86-2, Aluminum
ethylmethylphosphinate 184378-36-7, Terraaju C 60 380366-74-5,
PMP 200
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(**fireproofing** agents; manuf. of guanamine compds. as
fireproofing agents for polymer compns. with good
bleed-out resistance)

IT 100445-25-8P 710308-37-5P 718376-67-1P 718376-74-0P
718377-03-8P
RL: IMF (Industrial manufacture); MOA (Modifier or additive use);
TEM (Technical or engineered material use); PREP (Preparation); USES
(Uses)
(manuf. of guanamine compds. as **fireproofing** agents for
polymer compns. with good bleed-out resistance)

IT 9003-53-6, Toyo Styrol G 19 **9003-54-7**, Cevian JD
24968-12-5, Duranex 24979-70-2, Maruka Lyncur M-S 1P
25038-54-4, Ube Nylon 6, uses **25038-59-9**, Bellpet EFG 10,
uses 25805-74-7, Reny 6002 26834-02-6, Milex XL 225
55097-77-3, 1,4-Butanediol-isophthalic acid-terephthalic acid
copolymer, sru 117313-45-8, Epikote 1004K 126730-46-9, Duracon M
90-44 172827-17-7, PR 53647

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)

IT 108-80-5, Isocyanuric acid 111-97-7 461-58-5, Dicyandiamide
1656-48-0, 3,3'-Oxydipropionitrile 2465-93-2 3386-87-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(reactants in guanamine prepn.; manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)

IT 3159-62-4, Calcium 12-hydroxystearate 11097-59-9, DHT 4A
80693-00-1, ADK Stab PEP 36 153550-59-5, Sandostab P-EPQ

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(stabilizers; manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)

IT 9003-56-9, Acrylonitrile-butadiene-styrene copolymer

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(Cevian DP 61; manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

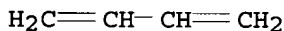
CMF C3 H3 N



CM 2

CRN 106-99-0

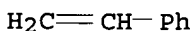
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



IT 26062-94-2 30580-17-7, 1,4-Butanediol-isophthalic

acid-terephthalic acid copolymer

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(assumed monomers; manuf. of guanamine compds. as **fireproofing** agents for polymer compns. with good bleed-out resistance)

RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

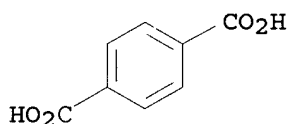
CMF C4 H10 O2

HO—(CH₂)₄—OH

CM 2

CRN 100-21-0

CMF C8 H6 O4



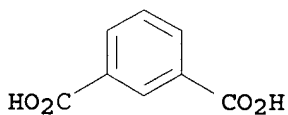
RN 30580-17-7 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5

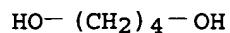
CMF C8 H6 O4



CM 2

CRN 110-63-4

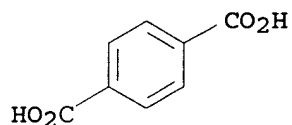
CMF C4 H10 O2



CM 3

CRN 100-21-0

CMF C8 H6 O4



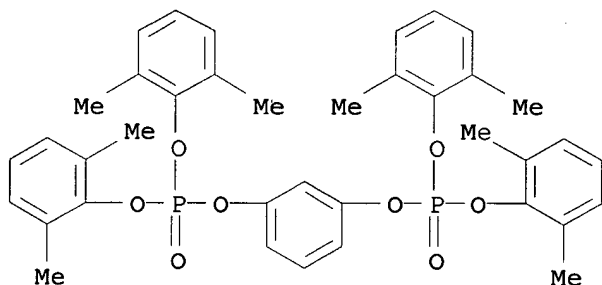
IT 139189-30-3, PX 200

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(**fireproofing** agents; manuf. of guanamine compds. as
fireproofing agents for polymer compns. with good
 bleed-out resistance)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



IT 9003-54-7, Cevian JD 24968-12-5, Duranex

25038-59-9, Bellpet EFG 10, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(manuf. of guanamine compds. as **fireproofing** agents for
 polymer compns. with good bleed-out resistance)

RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

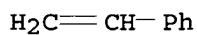
CMF C3 H3 N



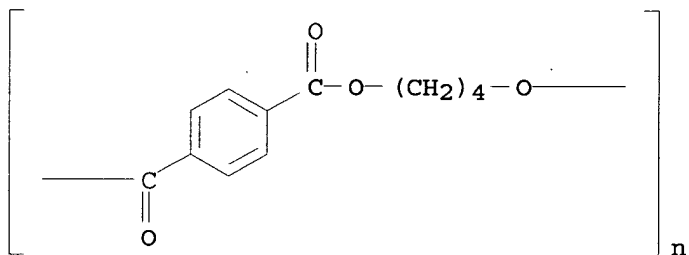
CM 2

CRN 100-42-5

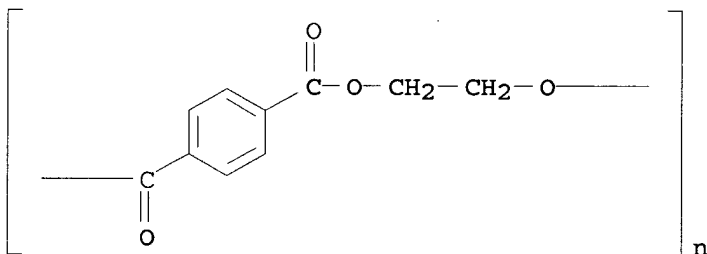
CMF C8 H8



RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)

RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)

L50 ANSWER 7 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2004:569952 HCAPLUS
 DN 141:124547
 TI Fireproofing laser weldable **polyester** resin composition
 IN Hiroyuki, Sumi; Kobayashi, Toshikazu
 PA E.I. Du Pont De Nemours and Company, USA
 SO PCT Int. Appl., 17 pp.
 CODEN: PIXXD2
 DT Patent

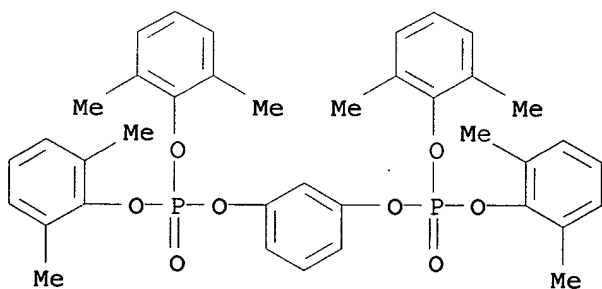
applicant

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004058869	A2	20040715	WO 2003-US40022	20031212
	WO 2004058869	A3	20040910		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2004186208	A1	20040923	US 2003-728334	20031204
	CA 2508903	AA	20040715	CA 2003-2508903	20031212
	EP 1578856	A2	20050928	EP 2003-814035	20031212
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
PRAI	US 2002-434153P	P	20021217		
	WO 2003-US40022	W	20031212		
AB	Title polyester resin compn. having core-shell structure is composed of 10-90 wt.% thermoplastic polyester selected from PET, polybutylene terephthalate, and polypropylene terephthalate, 1-35 wt.% phosphorus contg. flame retardant, such as resorcinol bis(di-2,6-xylyl)phosphate, 1-25 wt.% novolac phenolic polymer , 1-25 wt.% acrylic polymer , and, optionally, inorg. reinforcing agents. A laser welded article prepd. from the above compn. is also provided. Thus, PET 35.1 wt.%, resorcinol bis(di-2,6-xylyl)phosphate (PX 200) 13 wt.%, novolac phenolic resin (Novolac HRJ 12700CP) 8 wt.%, acrylic resin (Metablen S 2001) 6 wt.%, epoxy resin (Epikote 1009) 0.6 wt.%, carbon black (Cabot PE 3324) 1 wt.%, glass fiber (CS FT 689) 35 wt.%, and other additives, such as antioxidant, were blended to receive a polyester compn. having a tensile strength of 125 MPa and a elongation at break of 2.2 %.				
IC	ICM C08K005-523				
	ICS C08L067-02				
CC	37-6 (Plastics Manufacture and Processing)				
	Section cross-reference(s): 38				
ST	fireproofing PET phenolic acrylic resin				

- resorcinol bisdixylylphosphate **polyester** compn
- IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(Cabot PE 3324; fireproofing laser weldable **polyester** resin compn.)
- IT Glass fibers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(JAFT 592, CS-FT 689; fireproofing laser weldable **polyester** resin compn.)
- IT **Acrylic polymers**, uses
Epoxy resins, uses
Polyesters, uses
RL: POF (Polymer in formulation); USES (Uses)
(fireproofing laser weldable **polyester** resin compn.)
- IT **Phenolic resins**, uses
RL: POF (Polymer in formulation); USES (Uses)
(novolak; fireproofing laser weldable **polyester** resin compn.)
- IT 25610-17-7, Polypropylene terephthalate 26062-94-2, Polybutylene terephthalate
RL: POF (Polymer in formulation); USES (Uses)
(assumed monomers; fireproofing laser weldable **polyester** resin compn.)
- IT 139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(fireproofing laser weldable **polyester** resin compn.)
- IT 9022-20-2, Polypropylene terephthalate 24968-12-5, Polybutylene terephthalate 25038-59-9, PET polymer, uses 25068-38-6, Epikote 1009 149718-92-3, Metablen S 2001 722494-11-3, HRJ 12700CP
RL: POF (Polymer in formulation); USES (Uses)
(fireproofing laser weldable **polyester** resin compn.)
- IT 139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(fireproofing laser weldable **polyester** resin compn.)
- RN 139189-30-3 HCAPLUS
- CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



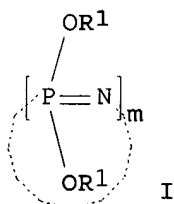
L50 ANSWER 8 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:943428 HCAPLUS
DN 140:17333
TI **Halogen-free fire-resistant resin**

compositions, their manufacture, and their moldings
 IN Harashina, Hatsuhiko; Yamada, Shinya
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 41 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003342482	A2	20031203	JP 2003-75748	20030319
PRAI	JP 2002-76241	A	20020319		
OS	MARPAT 140:17333				
GI					



AB The compns. for elec. parts, office automation app., household elec. appliances, machinery parts, etc., are manufd. by mixing (A) base resins, (B) cyclic phosphazene compds. I ($m = 3-25$; $R_1 = \text{aryl, alkylaryl; } 0.1-100 \text{ mol\% of } R_1 \text{ is alkylaryl}$), linear phosphazene compds. $X[P(OR_1)_2N]_mY$ [$n = 3-10,000$; $X = N:P(OR_1)_3, N:P(O)OR_1$; $Y = P(OR_1)_4, P(O)(OR_1)_2$; $R_1 = \text{same as above}$], and/or crosslinked compds. of the cyclic compds. and/or the linear compds., and (C) **fireproofing** aids of arom. resins, N compds., inorg. metal compds., S compds., Si compds., and/or P compds. Alternatively, the compns. comprise (a) poly(alkylene arylates) 100, (b) cyclic or linear tolyloxyphosphazenes, cyclic or linear phenoxytolylloxyphosphazenes, and/or their crosslinked compds. 1-80, and (c) **fireproofing** aids of (1) carbonizable arom. resins, (2) amino-contg. cyclic N compds., their salts with oxo acids or organophosphoric acids, polyphosphoric acid amides, urea compds., and/or tetrazoles, (3) polyvalent metal salts of H_3PO_4 , H_3BO_3 , and/or stannic acid, (4) organosulfonic acid metal salts, (5) (branched) organosiloxanes, and/or (6) (in)org. P compds. 0.1-500 parts. Thus, a compn. contg. Duranex [poly(butylene terephthalate)] 100, phenoxytolylloxyphosphazene cyclic trimer and tetramer 15, PMP 200 (melamine melam melem polyphosphate salt) 75, an antioxidant 0.5, and a filler 50 parts was injection-molded to give a test piece showing UL-94 **fire** resistance V-0.

IC ICM C08L101-00

ICS C08K003-00; C08K005-00; C08L043-02

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 38

- ST resin phosphazene **fireproofing** agent molding;
cyclophosphazene polybutylene terephthalate phosphate molding
fire resistance
- IT Polysiloxanes, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(Si Powder DC 4-7015, **fireproofing** aid; **halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)
- IT Zeolite 3A
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(Zeolum A 3, **fireproofing** aid; **halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)
- IT Polyphosphoric acids
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(amides, **fireproofing** aid; **halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)
- IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(antidripping agent; **halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)
- IT Polyamides, uses
Polyesters, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(arom., **fireproofing** aid; **halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)
- IT Polycarbonates, uses
Polyoxyphenylenes
RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(base resin, **fireproofing** aid; **halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)
- IT Glass fibers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(chopped, filler; **halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)
- IT Epoxy resins, uses
Polyphosphates
Polythiophenylenes
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(**fireproofing** aid; **halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)

- IT **Fireproofing agents**
(**halogen-free fire-resistant resin**
compns. contg. phosphazenes and **fireproofing aids** for moldings)
- IT **Acrylic polymers, uses**
Polyamides, uses
Polyesters, uses
Polyolefins
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**halogen-free fire-resistant resin**
compns. contg. phosphazenes and **fireproofing aids** for moldings)
- IT **Molded plastics, uses**
RL: TEM (Technical or engineered material use); USES (Uses)
(**halogen-free fire-resistant resin**
compns. contg. phosphazenes and **fireproofing aids** for moldings)
- IT **Phenolic resins, uses**
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(novolak, **fireproofing aid; halogen-free fire-resistant resin** compns. contg. phosphazenes and **fireproofing aids** for moldings)
- IT **Polyphosphazenes**
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(phenoxy- and tolyloxy-contg., bisphenol A- or resorcinol-crosslinked; **halogen-free fire-resistant resin** compns. contg. phosphazenes and **fireproofing aids** for moldings)
- IT **Polyphosphazenes**
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(phenoxy- and tolyloxy-contg., oligomeric; **halogen-free fire-resistant resin** compns. contg. phosphazenes and **fireproofing aids** for moldings)
- IT **Cyclophosphazenes**
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(phenoxy- and tolyloxy-contg.; **halogen-free fire-resistant resin** compns. contg. phosphazenes and **fireproofing aids** for moldings)
- IT **Sulfonic acids, uses**
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(salts, **fireproofing aid; halogen-free fire-resistant resin** compns. contg. phosphazenes and **fireproofing aids** for moldings)
- IT **Group IVA element compounds**
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(stannates, **fireproofing aid; halogen-free fire-resistant resin** compns. contg. phosphazenes and **fireproofing aids** for moldings)
- IT **Cyclophosphazenes**

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (tolyloxy-contg.; **halogen-free fire**
 -resistant resin compns. contg. phosphazenes and
fireproofing aids for moldings)

IT 14807-96-6, Talc, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (Talc 3A, filler; **halogen-free fire**
 -resistant resin compns. contg. phosphazenes and
fireproofing aids for moldings)

IT 9003-53-6, Polystyrene
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Toyo Styrol G 19; **halogen-free fire**
 -resistant resin compns. contg. phosphazenes and
fireproofing aids for moldings)

IT 9002-84-0, Polytetrafluoroethylene
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (antidripping agent; **halogen-free**
fire-resistant resin compns. contg. phosphazenes and
fireproofing aids for moldings)

IT 6683-19-8, Irganox 1010
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (antioxidant; **halogen-free fire**
 -resistant resin compns. contg. phosphazenes and
fireproofing aids for moldings)

IT 25037-45-0 25134-01-4
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers, base resin, **fireproofing** aid;
halogen-free fire-resistant resin
 compns. contg. phosphazenes and **fireproofing** aids for
 moldings)

IT 25718-70-1
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers, **fireproofing** aid; **halogen-free fire-resistant** resin compns. contg. phosphazenes and **fireproofing** aids for moldings)

IT 26062-94-2, Poly(butylene terephthalate)
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; **halogen-free fire**
 -resistant resin compns. contg. phosphazenes and
fireproofing aids for moldings)

IT 24936-68-3, Panlite L 1225, uses
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (base resin, Panlite L 1225, **fireproofing** aid, Iupilon S; **halogen-free fire-resistant**
 resin compns. contg. phosphazenes and **fireproofing** aids
 for moldings).

IT 24938-67-8, YPX 100F

- RL: MOA (Modifier or additive use); POF (Polymer in formulation);
 TEM (Technical or engineered material use); USES (Uses)
 (base resin, **fireproofing** aid; **halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)
- IT 9059-69-2, Butanediol-isophthalic acid-terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (comprised of actual and assumed monomers; **halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)
- IT 471-34-1, Whiton P 30, uses 11097-59-9, DHT 4A
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (filler; **halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)
- IT 108-78-1D, Melamine, polyphosphoric acid salts 496-46-8, Acetyleneurea 1309-42-8, Kisuma 5E 1502-47-2D, Melem, polyphosphoric acid salts 3576-88-3D, Melam, polyphosphoric acid salts 7757-93-9, Calcium monohydrogenphosphate 9003-53-6D, Polystyrene, sulfonated, sodium salt 12008-25-2, **Fire** Brake 415 12767-90-7, **Fire** Brake ZB 24979-70-2, Maruka Lyncur MS 1P 25068-38-6, Pheno Tohto YP 50 25212-74-2, Poly(1,4-phenylene) sulfide 25805-74-7, Reny 6002 26590-50-1, Polyarylate U 100 26834-02-6, Milex XL 225 27988-97-2D, Tetrazole, compds. 37640-57-6, MC 610 39281-59-9 87912-90-1, EPPN 113089-04-6, 1,4-Piperazinediyltetra-2,6-xylyl phosphate 117313-45-8, Epikote 1004K 139189-30-3, PX 200 172827-17-7, PR 53647 176316-86-2, Aluminum ethylmethylphosphinate 218768-84-4, Melapur 200 243144-78-7, PMP 100 380366-74-5, PMP 200
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (**fireproofing** aid; **halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)
- IT 27122-73-2, Hexakis(p-tolyloxy)cyclotriphosphazene
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (**halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)
- IT 9003-54-7, Cevian NJD 9003-56-9, Cevian VDP 611 24968-12-5, Duranex 25038-54-4, UBE Nylon 6, uses 25038-59-9, Bellpet EFG 10, uses 25822-54-2, Rodrun LC 3000 81843-52-9, Vectra A 950
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (**halogen-free** fire-resistant resin compns. contg. phosphazenes and **fireproofing** aids for moldings)
- IT 80-05-7, Bisphenol A, uses 108-46-3, Resorcinol, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(phosphazenes crosslinked with; **halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings**)

IT 7723-14-0, Nova Excel 140, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (red, **fireproofing aid; halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings**)

IT 38613-77-3, P-EPQ 80693-00-1, ADK Stab PEP 36
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (stabilizer; **halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings**)

IT 26062-94-2, Poly(butylene terephthalate)
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; **halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings**)

RN 26062-94-2 HCAPLUS
 CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

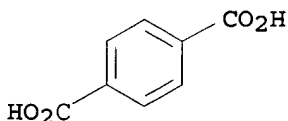
CM 1

CRN 110-63-4
 CMF C4 H10 O2

HO-(CH₂)₄-OH

CM 2

CRN 100-21-0
 CMF C8 H6 O4



IT 9059-69-2, Butanediol-isophthalic acid-terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (comprised of actual and assumed monomers; **halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings**)

RN 9059-69-2 HCAPLUS

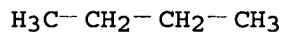
CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 25265-75-2

CMF C4 H10 O2

CCI IDS

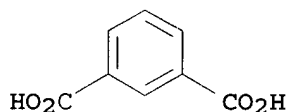


2 (D1-OH)

CM 2

CRN 121-91-5

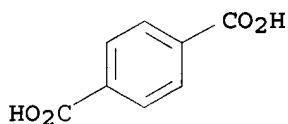
CMF C8 H6 O4



CM 3

CRN 100-21-0

CMF C8 H6 O4



IT 26590-50-1, Polyarylate U 100 139189-30-3, PX 200
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(fireproofing aid; halogen-free

fire-resistant resin compns. contg. phosphazenes and

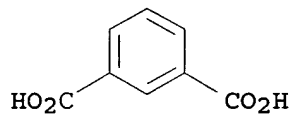
fireproofing aids for moldings)

RN 26590-50-1 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

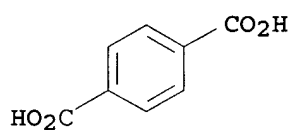
CM 1

CRN 121-91-5
CMF C8 H6 O4



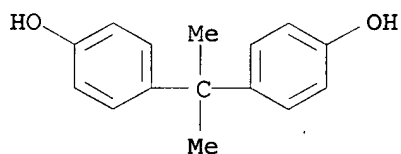
CM 2

CRN 100-21-0
CMF C8 H6 O4

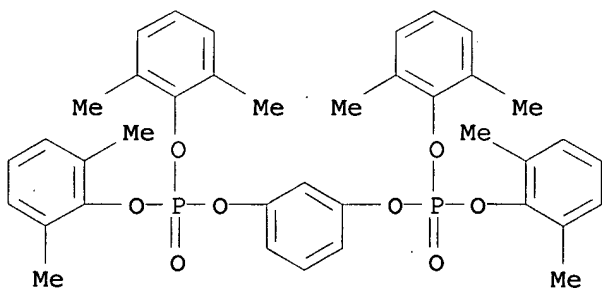


CM 3

CRN 80-05-7
CMF C15 H16 O2



RN 139189-30-3 HCAPLUS
CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



IT 9003-54-7, Cevian NJD 9003-56-9, Cevian VDP 611

24968-12-5, Duranex 25038-59-9, Bellpet EFG 10,
uses 25822-54-2, Rodrun LC 3000 81843-52-9,
Vectra A 950

RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)

(halogen-free fire-resistant resin
compns. contg. phosphazenes and fireproofing aids for
moldings)

RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

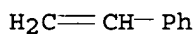
CMF C3 H3 N



CM 2

CRN 100-42-5

CMF C8 H8



RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

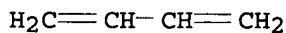
CMF C3 H3 N



CM 2

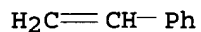
CRN 106-99-0

CMF C4 H6

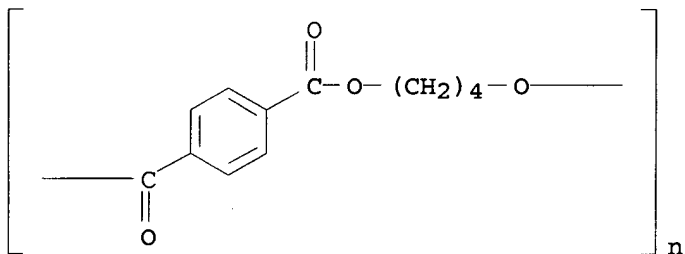


CM 3

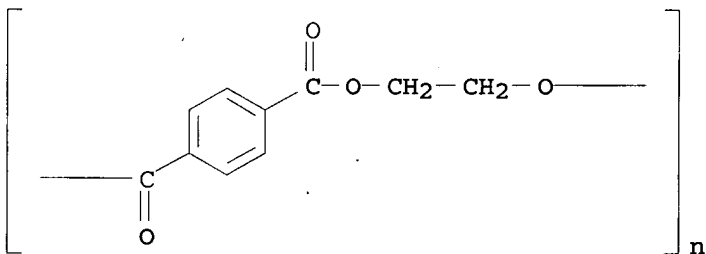
CRN 100-42-5
CMF C8 H8



RN 24968-12-5 HCAPLUS
CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



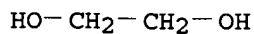
RN 25038-59-9 HCAPLUS
CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 25822-54-2 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, polymer with 1,2-ethanediol and 4-hydroxybenzoic acid (9CI) (CA INDEX NAME)

CM 1

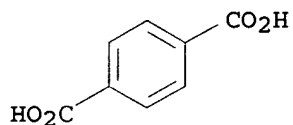
CRN 107-21-1
CMF C2 H6 O2



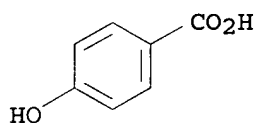
CM 2

CRN 100-21-0

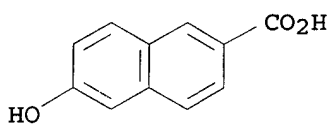
CMF C8 H6 O4



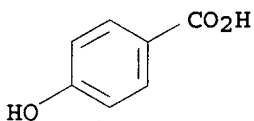
CM 3

CRN 99-96-7
CMF C7 H6 O3RN 81843-52-9 HCAPLUS
CN 2-Naphthalenecarboxylic acid, 6-hydroxy-, polymer with
4-hydroxybenzoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 16712-64-4
CMF C11 H8 O3

CM 2

CRN 99-96-7
CMF C7 H6 O3L50 ANSWER 9 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:628029 HCAPLUS
DN 139:181087

TI **Halogen-free fire-resistant polymer**
 compositions, their manufacture, and their moldings
 IN Harashina, Hatsuhiko
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 38 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2003226818	A2	20030815	JP 2002-348568	200211 29

PRAI JP 2001-368007 A 20011130

AB The compns. comprise (A) base polymers, (B) ≥ 1 **fireproofing** agent chosen from (a) composite salts of amino-contg. N compds. and polyphosphoric acid, (b) salts of amino-contg. N compds. and polymetaphosphoric acid, (c) polyphosphoric acid amides, (d) salts of amino-contg. N compds. with sulfuric acid, pyrosulfuric acid, org. sulfonic acids, org. phosphonic acids, or org. phosphinic acids, and (e) cyclic urea compds., and (C) ≥ 1 **fireproofing** aid chosen from (f) P compds., (g) arom. polymers, and (h) inorg. acid metal salts. Thus, a compn. contg. Duranex (polybutylene terephthalate) 100, Apinon 901 (melamine sulfate) 30, PX 200 [resorcinol bis(di-2,6-xylylphosphate)] 20, Irganox 1010 [pentaerythritol tetrakis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]] 0.5, calcium carbonate 2, bisphenol A diglycidyl ether 2, PTFE 1, and glass chopped strand 30 parts was injection-molded to give a test piece showing UL-94 rating V-0 and good moldability.

IC ICM C08L101-00

ICS C08J005-00; C08K003-24; C08K005-16; C08K005-49

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37, 76

ST **fireproofing** molding polybutylene terephthalate polyester melamine sulfate; resorcinol xylylphosphate pentaerythritol butyl hydroxyphenyl propionate antioxidant; calcium carbonate bisphenol glycidyl stabilizer PTFE **fireproofing**

IT Polyamides, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Celanese Nylon 66; **halogen-free fire**
-resistant polymer compns.)

IT Zeolite 3A

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (Zeolum A 3, stabilizer; **halogen-free**
fire-resistant polymer compns.)

IT Polyphosphoric acids

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (amides, **fireproofing** agents; **halogen-**
free fire-resistant polymer compns.)

IT Fluoropolymers, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (antidripping agent; **halogen-free fire-resistant** polymer compns.)

IT Fluoropolymers, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (antidripping agents; **halogen-free fire-resistant** polymer compns.)

IT Epoxy resins, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (arom. epoxy resins, **fireproofing** aids; **halogen-free fire-resistant** polymer compns.)

IT Polyesters, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (arom., **fireproofing** aid; **halogen-free fire-resistant** polymer compns.)

IT Polyamides, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (arom., **fireproofing** aids; **halogen-free fire-resistant** polymer compns.)

IT Polycarbonates, uses
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (base polymer, **fireproofing** aid; **halogen-free fire-resistant** polymer compns.)

IT Polyoxyphenylenes
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (base polymers, **fireproofing** aids; **halogen-free fire-resistant** polymer compns.)

IT Phenoxy resins
 Polythiophenylenes
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (**fireproofing** aids; **halogen-free fire-resistant** polymer compns.)

IT Electric apparatus
Fire-resistant materials
Fireproofing agents
 Machinery parts
 Stabilizing agents
 (**halogen-free fire-resistant** polymer compns.)

IT Polyamides, uses
 Polyesters, uses
 Polyolefins
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (**halogen-free fire-resistant** polymer compns.)

IT Molded plastics, uses
 RL: TEM (Technical or engineered material use); USES (Uses)

- (**halogen-free fire-resistant**
polymer compns.)
- IT Antioxidants
(hindered phenols; **halogen-free fire**
-resistant polymer compns.)
- IT Phenols, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(hindered, antioxidants; **halogen-free**
fire-resistant polymer compns.)
- IT Phenolic resins, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(novolak, **fireproofing** aids; **halogen-**
free fire-resistant polymer compns.)
- IT Automobiles
(parts; **halogen-free fire-resistant**
polymer compns.)
- IT Phosphazenes
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(phenoxy, **fireproofing** aid; **halogen-**
free fire-resistant polymer compns.)
- IT Vinyl compounds, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(polymers; **halogen-free fire**
-resistant polymer compns.)
- IT Polycarbodiimides
RL: MOA (Modifier or additive use); RCT (Reactant); TEM (Technical
or engineered material use); RACT (Reactant or reagent); USES (Uses)
(reactive stabilizers; **halogen-free**
fire-resistant polymer compns.)
- IT Polyphosphates
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(salts, **fireproofing** agents; **halogen-**
free fire-resistant polymer compns.)
- IT 32131-17-2, Nylon 66, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(Celanese Nylon 66; **halogen-free fire**
-resistant polymer compns.)
- IT 9002-84-0, Polytetrafluoroethylene
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(antidripping agent; **halogen-free**
fire-resistant polymer compns.)
- IT 6683-19-8, Irganox 1010
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(antioxidant; **halogen-free fire**
-resistant polymer compns.)
- IT 25037-45-0
RL: MOA (Modifier or additive use); POF (Polymer in formulation);
TEM (Technical or engineered material use); USES (Uses)

- (assumed monomers, base polymer, **fireproofing aid; halogen-free fire-resistant polymer compns.**)
- IT 25718-70-1
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers, **fireproofing aid; halogen-free fire-resistant polymer compns.**)
- IT 26062-94-2 30580-17-7, 1,4-Butanediol-isophthalic acid terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; **halogen-free fire-resistant polymer compns.**)
- IT 24936-68-3, Panlite L 1225, uses
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (base polymer, **fireproofing aid; halogen-free fire-resistant polymer compns.**)
- IT 69-93-2, Uric acid, uses 496-46-8, Acetylene urea 41583-09-9, Melamine phosphate 80128-63-8 84962-53-8, Apinon 901 259826-33-0 364728-71-2, MMS 200 380366-74-5, PMP 200 577965-25-4
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (**fireproofing agent; halogen-free fire-resistant polymer compns.**)
- IT 7757-93-9, Calcium monohydrogen phosphate 12767-90-7, **Firebrake ZB** 25068-38-6, Pheno Tohto YP 50 25805-74-7, Reny 6002 26590-50-1, U 100 31870-48-1, CR 741 34670-63-8 39281-59-9 70785-76-1 99208-50-1 113089-04-6 124784-27-6, PX 201 139189-30-3, PX 200 147263-99-8, PX 202 172827-17-7, Sumilit PR 53647 176316-86-2, Aluminum ethylmethylphosphinate
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (**fireproofing aid; halogen-free fire-resistant polymer compns.**)
- IT 9003-54-7, Cevian N JD 24968-12-5, Duranex 25038-54-4, Ube Nylon 6, uses 25038-59-9, Bellpet EFG 10, uses 55097-77-3
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (**halogen-free fire-resistant polymer compns.**)
- IT 1675-54-3, Bisphenol A diglycidyl ether 142627-97-2, OXT 121 191234-32-9, Carbodilite HMV 8CA 537041-66-0, Epocros RAS 1020
 RL: MOA (Modifier or additive use); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
 (reactive stabilizer; **halogen-free fire-resistant polymer compns.**)
- IT 7723-14-0, Nova Excel 140, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (red, **fireproofing aid; halogen-free fire-resistant polymer compns.**)

IT 471-34-1, Calcium carbonate, uses 1309-42-8, Magnesium hydroxide
11097-59-9, DHT 4A 80693-00-1, ADK Stab PEP 36 153550-59-5,
Sandostab P-EPQ
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(stabilizer; **halogen-free fire**
-resistant polymer compns.)

IT 26062-94-2 30580-17-7, 1,4-Butanediol-isophthalic
acid terephthalic acid copolymer
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(assumed monomers; **halogen-free fire**
-resistant polymer compns.)

RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA
INDEX NAME)

CM 1

CRN 110-63-4

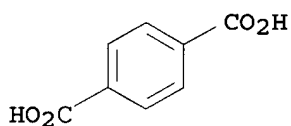
CMF C4 H10 O2

HO-(CH₂)₄-OH

CM 2

CRN 100-21-0

CMF C8 H6 O4



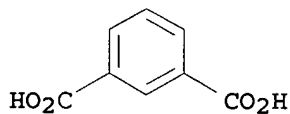
RN 30580-17-7 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic
acid and 1,4-butanediol (9CI) (CA INDEX NAME)

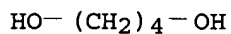
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CRN 121-91-5

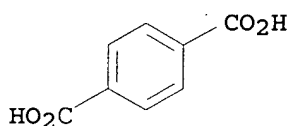
CMF C8 H6 O4



CM 2

CRN 110-63-4
CMF C4 H10 O2

CM 3

CRN 100-21-0
CMF C8 H6 O4

IT 26590-50-1, U 100 139189-30-3, PX 200

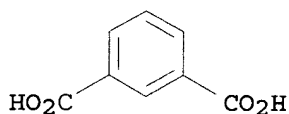
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(fireproofing aid; halogen-free
fire-resistant polymer compns.)

RN 26590-50-1 HCAPLUS

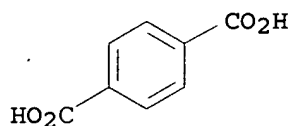
CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5
CMF C8 H6 O4

CM 2

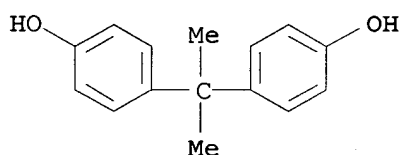
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CMF C8 H6 O4



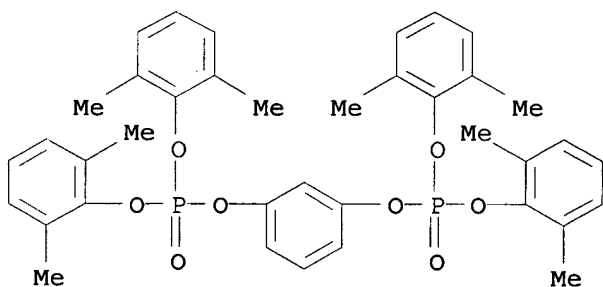
CM 3

CRN 80-05-7

CMF C15 H16 O2



RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)

IT 9003-54-7, Cevian N JD 24968-12-5, Duranex

25038-59-9, Bellpet EFG 10, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(halogen-free fire-resistant polymer compns.)

RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

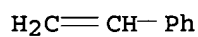
CMF C3 H3 N



CM 2

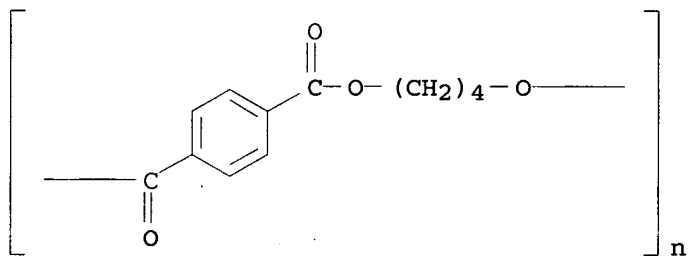
CRN 100-42-5

CMF C8 H8



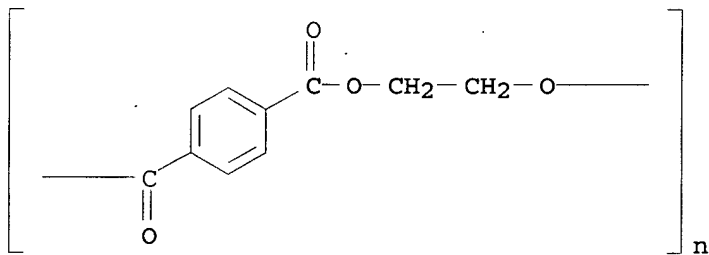
RN 24968-12-5 HCAPLUS

CN	Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI)	(CA
	INDEX NAME)	



RN 25038-59-9 HCAPLUS

CN	Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI)	(CA
	INDEX NAME)	



L50 ANSWER 10 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:434669 HCAPLUS

DN 139:7695

TI **Flame-retardant resin composition and molded products**
therefrom

IN Harashina, Hatsuhiro; Yamada, Shinya

PA Polyplastics Co., Ltd., Japan

SO PCT Int. Appl., 100 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003046085	A1	20030605	WO 2002-JP12406	20021128
W: CN, JP, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
EP 1486536	A1	20041215	EP 2002-785952	20021128
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
US 2005004292	A1	20050106	US 2004-496183	20040520
PRAI JP 2001-368004	A	20011130		
WO 2002-JP12406	W	20021128		
AB	A flame -retardant resin compn. comprises (A) a base resin; (B) a flame retardant contg. ≥ 1 arom. resin (B1) selected among polyphenylene oxide resins and polyphenylene sulfide resins, a phosphoric ester (B2), and a nitrogenous cyclic compd. (B3); and (C) a styrene resin having a melt flow rate of 8 g/10 min or lower. The base resin may be a polyester resin. The styrene resin may be one having a melt flow rate of 0.1 to 5 g/10 min. The phosphoric ester (B2) may be a fused phosphoric ester, and the nitrogenous cyclic compd. (B3) may be a polyphosphoric acid salt of an aminated triazine compd., a polyphosphoramidate, etc. The flame -retardant resin compn. has been flameproofed without using any halogenated flame retardant. A compn. contained PBT (Duranex) 100, Poly(1,4-phenylene oxide) (YPX 100F) 30, resorcinol bis(di-2,6-xylene phosphite) (PX200) 40, polystyrene 10, glass fiber 80, and Irganox 1010 0.8 part, giving test pieces with UL94 burning rating V-1, no dripping, and good blooming resistance.			
IC	ICM C08L101-00			
CC	37-6 (Plastics Manufacture and Processing) Section cross-reference(s): 38			
ST	flame retardant resin compn molded product; PBT polyoxyphenylene polystyrene phosphate fire resistant material			
IT	Polyesters, uses RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses) (Bellpet EFG10; halo-free flame -retardant resin compn. and molded products therefrom)			
IT	Polyoxyphenylenes Polythiophenylenes RL: MOA (Modifier or additive use); USES (Uses) (fireproofing agent; halo-free flame -retardant resin compn. and molded products therefrom)			
IT	Electric apparatus Fire -resistant materials Fireproofing agents			

date no good

same as US 2005 06 04292

Handling et. al.

(**halo-free flame-retardant resin**
compn. and molded products therefrom)

IT Molded plastics, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(**halo-free flame-retardant resin**
compn. and molded products therefrom)

IT Acrylic polymers, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(**halo-free flame-retardant resin**
compn. and molded products therefrom)

IT Polyamides, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(**halo-free flame-retardant resin**
compn. and molded products therefrom)

IT Polycarbonates, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(**halo-free flame-retardant resin**
compn. and molded products therefrom)

IT Polyesters, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(**halo-free flame-retardant resin**
compn. and molded products therefrom)

IT Polyolefins
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(**halo-free flame-retardant resin**
compn. and molded products therefrom)

IT Polyphosphoric acids
RL: MOA (Modifier or additive use); USES (Uses)
(meta-, melamine salt; **halo-free**
flame-retardant resin compn. and molded products
therefrom)

IT Automobiles
(parts; **halo-free flame-retardant**
resin compn. and molded products therefrom)

IT Phosphazenes
RL: MOA (Modifier or additive use); USES (Uses)
(phenoxy, **flame** retardant; **halo-free**
flame-retardant resin compn. and molded products
therefrom)

IT Vinyl compounds, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(polymers; **halo-free flame**
-retardant resin compn. and molded products therefrom)

IT 5945-33-5, Bisphenol A bis(diphenylphosphate)
RL: MOA (Modifier or additive use); USES (Uses)
(Adekastab FP700, **flame** retardant; **halo-**
free flame-retardant resin compn. and molded
products therefrom)

IT 84962-53-8, Apinon 901
RL: MOA (Modifier or additive use); USES (Uses)

(Apinon 901, **flame** retardant; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 25038-59-9, Bellpet EFG10, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Bellpet EFG10; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 24968-12-5, Duranex
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Duranex; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 37640-57-6, MC610
 RL: MOA (Modifier or additive use); USES (Uses)
 (MC610, **flame** retardant; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 139189-30-3, PX200
 RL: MOA (Modifier or additive use); USES (Uses)
 (PX200, **flame** retardant; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 124784-27-6, PX201
 RL: MOA (Modifier or additive use); USES (Uses)
 (PX201, **flame** retardant; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 147263-99-8, PX202
 RL: MOA (Modifier or additive use); USES (Uses)
 (PX202, **flame** retardant; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 24938-67-8, YPX100F
 RL: MOA (Modifier or additive use); USES (Uses)
 (YPX100F, **flame** retardant; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 26062-94-2, Butanediol-terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 25212-74-2, Poly(1,4-phenylene sulfide) 33411-63-1, Thiophenol polymer 34670-63-8 66813-75-0, Sumisafe PM 218768-84-4, Melapur 200 380366-74-5, PMP200
 RL: MOA (Modifier or additive use); USES (Uses)
 (**flame** retardant; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 25134-01-4, 2,6-Dimethylphenol polymer
 RL: MOA (Modifier or additive use); USES (Uses)
 (**halo-free flame**-retardant resin compn. and molded products therefrom)

IT 9003-53-6, Polystyrene 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9, ABS polymer

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(halo-free flame-retardant resin compn. and molded products therefrom)

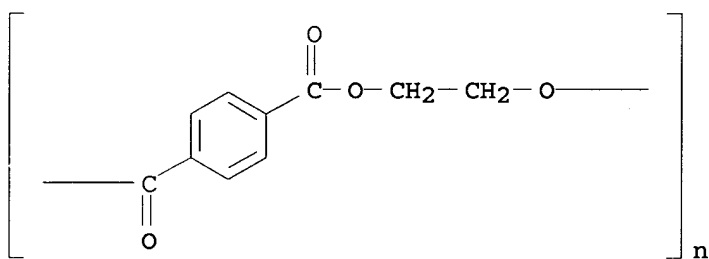
IT 25038-59-9, Bellpet EFG10, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(Bellpet EFG10; halo-free flame-retardant resin compn. and molded products therefrom)

RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



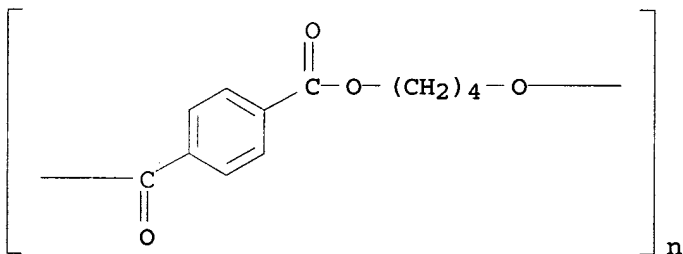
IT 24968-12-5, Duranex

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(Duranex; halo-free flame-retardant resin compn. and molded products therefrom)

RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



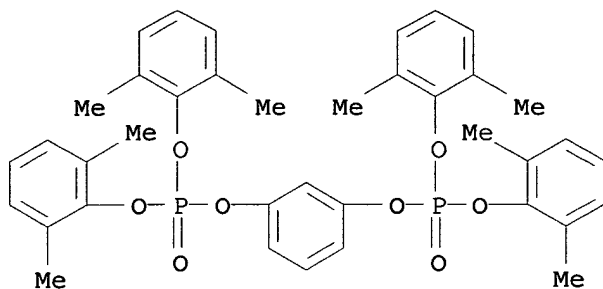
IT 139189-30-3, PX200

RL: MOA (Modifier or additive use); USES (Uses)

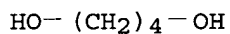
(PX200, flame retardant; halo-free flame-retardant resin compn. and molded products therefrom)

RN 139189-30-3 HCAPLUS

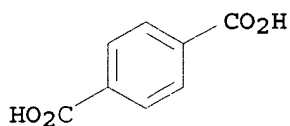
CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



IT 26062-94-2, Butanediol-terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; **halo-free flame**
 -retardant resin compn. and molded products therefrom)
 RN 26062-94-2 HCAPLUS
 CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)
 CM 1
 CRN 110-63-4
 CMF C4 H10 O2



CM 2
 CRN 100-21-0
 CMF C8 H6 O4



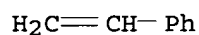
IT 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9
 , ABS polymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (**halo-free flame**-retardant resin
 compn. and molded products therefrom)
 RN 9003-54-7 HCAPLUS
 CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)
 CM 1
 CRN 107-13-1

CMF C3 H3 N



CM 2

CRN 100-42-5
CMF C8 H8



RN 9003-56-9 HCAPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

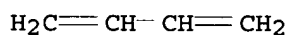
CM 1

CRN 107-13-1
CMF C3 H3 N



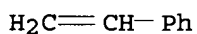
CM 2

CRN 106-99-0
CMF C4 H6



CM 3

CRN 100-42-5
CMF C8 H8



RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 11 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:434668 HCAPLUS
DN 139:22865
TI **Flame**-retardant resin composition and molded products

therefrom
 IN Harashina, Hatsuhiko
 PA Polyplastics Co., Ltd., Japan
 SO PCT Int. Appl., 114 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003046084	A1	20030605	WO 2002-JP12405	20021128
	W: CN, JP, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
	EP 1466946	A1	20041013	EP 2002-785951	20021128
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
	US 2004254270	A1	20041216	US 2004-493538	20040422

PRAI JP 2001-368005 A 20011130
 WO 2002-JP12405 W 20021128

AB A **flame**-retardant resin compn. comprises a thermoplastic resin; a **flame** retardant comprising a phosphorus compd., an arom. resin, and at least one **flame** retardant aid selected among nitrogen compds. and metal salts of inorg. acids; and ≥ 1 stabilization aid selected among compds. having a functional group reactive with an active hydrogen atom and water-repellent compds. The phosphorus compd. may be a phosphoric ester. The arom. resin may be a polyphenylene sulfide resin or polyphenylene oxide resin. The nitrogen compds. may be salts of an aminated triazine compd. with an oxoacid, salts of an aminated triazine compd. with a hydroxylated triazine compd., polyphosphoramides, cyclic urea compds., etc. The **flame**-retardant resin compn. has been **flameproofed** without using any halogenated **flame** retardant. A compn. contained PBT (Duranex) 100, resorcinol bis(di-2,6-xylenyl phosphate) (PX200) 40, Poly(1,4-phenylene oxide) (YPX 100F) 35, PMP 200 15, Epikote 828 2, glass chopped strand 80, Irganox 1010 0.8, Adekastab PEP36 0.8, and 1.3 PTFE part, giving test pieces with UL94 burning rating V-0, no dripping, good blooming resistance and tensile strength retention in water 78%.

IC ICM C08L101-00
 CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 38

ST **flame** retardant resin compn molded product; PBT polyoxyphenylene phosphate fire resistant material

IT Stabilizing agents
 (aid; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT Polyesters, uses

File no 8001

- RL: MOA (Modifier or additive use); USES (Uses)
(arom., assumed monomers, **flame** retardant; **halo-free flame**-retardant resin compn. and molded products therefrom)
- IT Fatty acids, uses
RL: MOA (Modifier or additive use); USES (Uses)
(branched, glycidyl ester, stabilization aid; **halo-free flame**-retardant resin compn. and molded products therefrom)
- IT **Phenolic resins**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(epoxy, novolak, **flame** retardant; **halo-free flame**-retardant resin compn. and molded products therefrom)
- IT Electric apparatus
Fire-resistant materials
Fireproofing agents
(**halo-free flame**-retardant resin compn. and molded products therefrom)
- IT Polythiophenylenes
RL: MOA (Modifier or additive use); USES (Uses)
(**halo-free flame**-retardant resin compn. and molded products therefrom)
- IT Molded plastics, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(**halo-free flame**-retardant resin compn. and molded products therefrom)
- IT **Acrylic polymers**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**halo-free flame**-retardant resin compn. and molded products therefrom)
- IT Polyamides, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**halo-free flame**-retardant resin compn. and molded products therefrom)
- IT Polycarbonates, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**halo-free flame**-retardant resin compn. and molded products therefrom)
- IT **Polyesters**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**halo-free flame**-retardant resin compn. and molded products therefrom)
- IT Polyolefins
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**halo-free flame**-retardant resin compn. and molded products therefrom)
- IT Polyoxyphenylenes
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**halo-free flame**-retardant resin

compn. and molded products therefrom)

IT Epoxy resins, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (phenolic, novolak, **flame** retardant; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT Phosphazenes
 RL: MOA (Modifier or additive use); USES (Uses)
 (phenoxy, **flame** retardant; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT Vinyl compounds, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (polymers; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT Epoxy resins, uses
 Polysiloxanes, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (stabilization aid; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 25068-38-6, Epikote 828
 RL: MOA (Modifier or additive use); USES (Uses)
 (Epikote 1004, stabilization aid; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 12767-90-7, Boron zinc oxide (B6Zn2O11)
 RL: MOA (Modifier or additive use); USES (Uses)
 (**Firebrake** ZB, **flame** retardant; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 142627-97-2, 1,4-Bis[3-ethyl-3-oxetanylmethoxy]methyl]benzene
 RL: MOA (Modifier or additive use); USES (Uses)
 (OXT-121, stabilization aid; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 26590-50-1, U 100
 RL: MOA (Modifier or additive use); USES (Uses)
 (U 100; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 25037-45-0, Bisphenol A-carbonic acid copolymer 25134-01-4, 2,6-Dimethylphenol polymer 25718-70-1, Adipic acid-m-xylylenediamine copolymer 33411-63-1, Thiophenol polymer
 RL: MOA (Modifier or additive use); USES (Uses)
 (assumed monomers, **flame** retardant; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 26062-94-2, Butanediol-terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; **halo-free flame**-retardant resin compn. and molded products therefrom)

IT 7757-93-9, Calcium monohydrogen phosphate 24936-68-3, Panlite L 1225, uses 24938-67-8, YPX 100F 25212-74-2, Poly(1,4-phenylene sulfide) 25805-74-7, Reny 6002 34670-63-8 37640-57-6, MC 610 66813-75-0, Sumisafe PM 81775-74-8, EPPN 201 84962-53-8,

Apinon 901 124784-27-6, PX 201 139189-30-3, PX 200
 147263-99-8, PX 202 176316-86-2, Aluminum ethylmethylphosphinate
 218768-84-4, Melapur 200 243144-78-7, PMP 100 380366-74-5, PMP
 200

RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardant; halo-free
 flame-retardant resin compn. and molded products
 therefrom)

IT 31870-48-1, CR 741 172827-17-7, Sumilit PR 53647

RL: MOA (Modifier or additive use); USES (Uses)
 (halo-free flame-retardant resin
 compn. and molded products therefrom)

IT 9003-53-6, Polystyrene 9003-54-7, Cevian NJD 24968-12

-5, Duranex 25038-59-9, Bellpet EFG 10, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)

(halo-free flame-retardant resin
 compn. and molded products therefrom)

IT 9016-00-6, Dimethyl silicone 18934-00-4, OXT-221 31900-57-9,
 Dimethylsilanediol polymer 34052-90-9, 2,2'-(1,3-Phenylene)-bis(2-
 oxazoline) 73666-46-3, Vestanat T1890 116770-96-8,
 Modiper A 4200 117091-81-3, Modiper A 4100

124752-62-1, Reseda GP 500 191234-32-9, Carbodilite
 HMV-8CA 537041-66-0, Epocros RAS 1020

RL: MOA (Modifier or additive use); USES (Uses)

(stabilization aid; halo-free flame
 -retardant resin compn. and molded products therefrom)

IT 26590-50-1, U 100

RL: MOA (Modifier or additive use); USES (Uses)

(U 100; halo-free flame-retardant
 resin compn. and molded products therefrom)

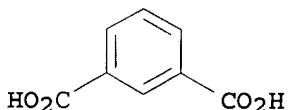
RN 26590-50-1 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic
 acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5

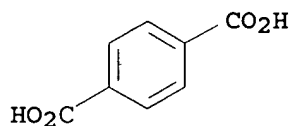
CMF C8 H6 O4



CM 2

CRN 100-21-0

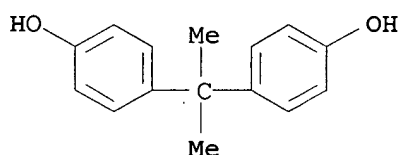
CMF C8 H6 O4



CM 3

CRN 80-05-7

CMF C15 H16 O2

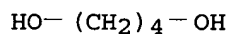


IT 26062-94-2, Butanediol-terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; **halo-free flame**
 -retardant resin compn. and molded products therefrom)
 RN 26062-94-2 HCAPLUS
 CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

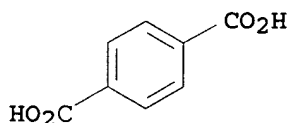
CMF C4 H10 O2



CM 2

CRN 100-21-0

CMF C8 H6 O4



IT 81775-74-8, EPPN 201 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)

(flame retardant; halo-free
flame-retardant resin compn. and molded products
therefrom)

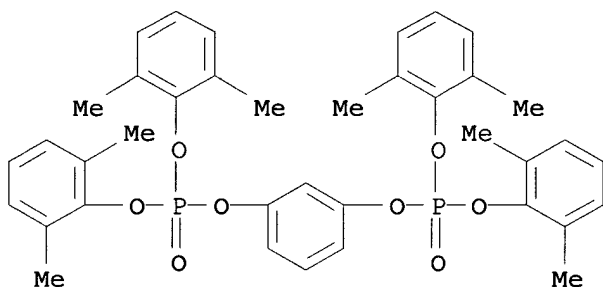
RN 81775-74-8 HCAPLUS

CN EPPN 201 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



IT 9003-54-7, Cevian NJD 24968-12-5, Duranex

25038-59-9, Bellpet EFG 10, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)

(halo-free flame-retardant resin
compn. and molded products therefrom)

RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

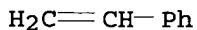
CMF C3 H3 N



CM 2

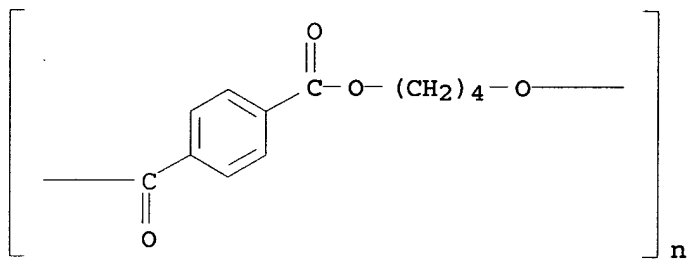
CRN 100-42-5

CMF C8 H8



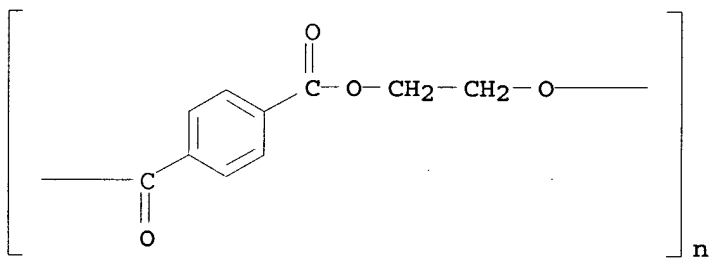
RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)



RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



IT 116770-96-8, Modiper A 4200 117091-81-3, Modiper A 4100 124752-62-1, Reseda GP 500

RL: MOA (Modifier or additive use); USES (Uses)

(stabilization aid; **halo-free flame**

-retardant resin compn. and molded products therefrom)

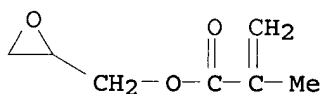
RN 116770-96-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with ethene and oxiranylmethyl 2-methyl-2-propenoate, graft (9CI) (CA INDEX NAME)

CM 1

CRN 106-91-2

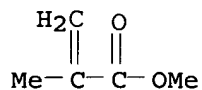
CMF C7 H10 O3



CM 2

CRN 80-62-6

CMF C5 H8 O2



CM 3

CRN 74-85-1

CMF C2 H4



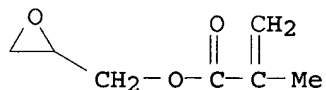
RN 117091-81-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 106-91-2

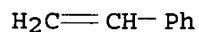
CMF C7 H10 O3



CM 2

CRN 100-42-5

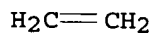
CMF C8 H8



CM 3

CRN 74-85-1

CMF C2 H4

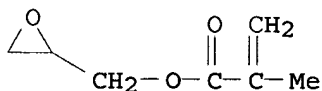


RN 124752-62-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethenylbenzene, graft (9CI) (CA INDEX NAME)

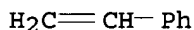
CM 1

CRN 106-91-2
CMF C7 H10 O3



CM 2

CRN 100-42-5
CMF C8 H8



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 12 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:434667 HCAPLUS
DN 139:22864
TI Flame-retardant resin compositions
IN Harashina, Hatsuhiko; Yamada, Shinya
PA Polyplastics Co., Ltd., Japan
SO PCT Int. Appl., 70 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003046083	A1	20030605	WO 2002-JP12404	20021128
W: CN, JP, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
EP 1452567	A1	20040901	EP 2002-785950	20021128
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
US 2004266916	A1	20041230	US 2004-496163	20040520

PRAI JP 2001-367988 A 20011130
WO 2002-JP12404 W 20021128

AB Title compns., with dripping prevention, consist of base resins, novolak epoxy resin surface-treating agent- or binding agent-treated inorg. fillers, and fire retardants comprising of (a)

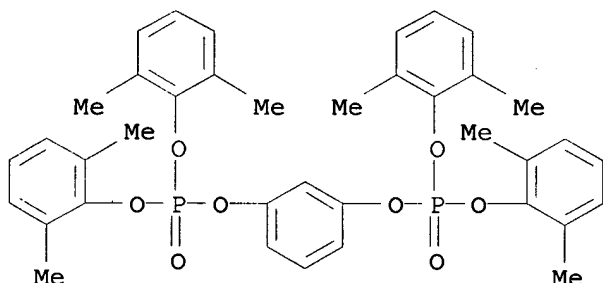
polyoxyphenylenes and/or polythiophenylenes 10-150, (b) phosphate esters 100, and (c) N-contg. cyclic compds. 0-100 parts (preferably). A compn. comprising Duranex 100, YPX 100F 50, PX 200 60, novolak epoxy resin-treated glass chopped strands 100, Toyo Styrol GP-G 200C 15, Irganox 1010 1.0, and PTFE 1.5 parts was molded into a test piece with UL 94 test V-0 and no dripping and no blooming after 5 h at 150°.

- IC ICM C08L101-00
 CC 37-6 (Plastics Manufacture and Processing)
 ST polyoxyphenylene phosphate ester flame retardant resin compn dripping prevention; polythiophenylene phosphate ester flame retardant resin compn dripping prevention; novolak epoxy resin treated inorg filler fireproof resin compn
 IT **Polyesters**, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Bellpet EFG; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
 IT Zeolite 3A
 RL: MOA (Modifier or additive use); USES (Uses)
 (Zeolum A 3, stabilizer; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
 IT Fatty acids, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (branched, glycidyl esters, stabilizers; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
 IT Glass fibers, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (chopped strands, novolak epoxy resin-treated; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
 IT Fluoropolymers, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (dripping preventer; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
 IT **Phenolic resins**, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (epoxy, novolak, glass fibers treated with; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
 IT Glass, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (flakes, novolak epoxy resin-treated; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
 IT Borates
 Hydroxides (inorganic)
 Oxides (inorganic), uses
 Polycarbonates, uses
 Sulfides, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardant aids; novolak epoxy resin-treated inorg. filler-

- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Phosphates, uses
Polyoxyphenylenes
Polythiophenylenes
RL: MOA (Modifier or additive use); USES (Uses)
(flame retardants; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Amines, uses
RL: MOA (Modifier or additive use); USES (Uses)
(hindered, antioxidants; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Phosphates, uses
RL: MOA (Modifier or additive use); USES (Uses)
(hydrogen, flame retardant aids; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Heterocyclic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(nitrogen, flame retardants; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Antioxidants
Fillers
Fire-resistant materials
Fireproofing agents
Stabilizing agents
(novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT **Acrylic polymers**, uses
Polyamides, uses
Polyolefins
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Epoxy resins, uses
RL: MOA (Modifier or additive use); USES (Uses)
(phenolic, novolak, glass fibers treated with; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Vinyl compounds, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polymers; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 25038-59-9, PET polymer, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(Bellpet EFG; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)

- prevention)
- IT 24968-12-5, Duranex
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(Duranex; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 26590-50-1
RL: MOA (Modifier or additive use); USES (Uses)
(U 100, flame retardant aids; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 6683-19-8, Irganox 1010
RL: MOA (Modifier or additive use); USES (Uses)
(antioxidant; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 26062-94-2, Butylene glycol-terephthalic acid copolymer
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(assumed monomers; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 9002-84-0, PTFE
RL: MOA (Modifier or additive use); USES (Uses)
(dripping preventer; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 1309-42-8, Kisuma 5E 7757-93-9, Calcium hydrogen phosphate
12767-90-7, Firebrake ZB 24936-68-3, Panlite L 1225, uses
25068-38-6, Epikote 828 172827-17-7, Sumilit PR 53647
197527-64-3, Finemag SN
RL: MOA (Modifier or additive use); USES (Uses)
(flame retardant aids; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 24938-67-8, YPX 100F 25212-74-2, Poly(1,4-phenylene sulfide)
31870-48-1, CR 741 34670-63-8 37640-57-6, MC 610 66813-75-0, Sumisafe PM 70785-76-1 84962-53-8, Apinon 901 113089-04-6
124784-27-6, PX 201 139189-30-3, PX 200 (phosphate)
147263-99-8, PX 202 (phosphate) 195143-41-0 218768-84-4, Melapur 200 380366-74-5, PMP 200
RL: MOA (Modifier or additive use); USES (Uses)
(flame retardant; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 25134-01-4, 2,6-Dimethyl-1,4-phenylene ether homopolymer
RL: MOA (Modifier or additive use); USES (Uses)
(novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 9003-53-6, Toyo styrol GP-G 200C 9003-54-7, Cevian NJD
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)

prevention)
 IT 7723-14-0, Novaexcel 140, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (red, flame retardant aids; novolak epoxy resin-treated inorg.
 filler- and sp. flame retardant-contg. resin compns. with
 dripping and blooming prevention)
 IT 556-52-5D, Glycidyl alcohol, versatic acid esters 11097-59-9, DHT
 4A 80693-00-1, ADK Stab PEP 36 142627-97-2, 1,4-Bis(3-ethyl-3-
 oxetanyl)methoxymethylbenzene 153550-59-5, Sandostab P-EPQ
 RL: MOA (Modifier or additive use); USES (Uses)
 (stabilizer; novolak epoxy resin-treated inorg. filler- and sp.
 flame retardant-contg. resin compns. with dripping and blooming
 prevention)
 IT 139189-30-3, PX 200 (phosphate)
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardant; novolak epoxy resin-treated inorg. filler- and
 sp. flame retardant-contg. resin compns. with dripping and
 blooming prevention)
 RN 139189-30-3 HCAPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 13 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2002:767997 HCAPLUS
 DN 137:280008
 TI Fire-resistant resin composition for making breakers and
 electromagnetic switches
 IN Ishii, Hiromitsu; Kumaki, Jiro; Nagao, Takashi
 PA Toray Industries, Inc., Japan
 SO Jpn. Kokai Tokyo Koho, 19 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002294051	A2	20021009	JP 2001-94547	200103 29

PRAI JP 2001-94547 20010329
OS MARPAT 137:280008
AB A **halogen-free fire-resistant compn.**
comprises (A) a polyalkylene terephthalate resin, (B) 1-20 wt.% of a vinyl resin, (C) 1-30 wt.% of a phosphoric acid ester, and (D) 20-50 wt.% of a cyanuric acid or isocyanuric acid salt of a triazine compd. Thus a compn. of this invention contained 40 wt.% polybutylene terephthalate, 10 wt.% of acrylonitrile-styrene copolymer, 20 wt.% of 1,3-phenylene tetrakis(2,6-dimethylphenyl) phosphate, and 30 wt.% of melamine isocyanurate. Breakers and electromagnetic switches made from the compn. are also claimed.

IC ICM C08L067-02
ICS C08J005-04; C08K005-3492; C08K005-521; C08K007-02; C08L025-12; C08L051-00; C08L063-00; C08L101-00; C09K021-10; C09K021-12; H01H045-02; H01H073-06

CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 38, 76

ST **fire resistant polyester compn breaker electromagnetic switch; polybutylene terephthalate fire resistant compn; acrylonitrile styrene copolymer fire resistant compn; phenylene tetrakis dimethylphenyl phosphate fire resistant compn; melamine isocyanurate fire resistant compn**

IT Styrene-butadiene rubber, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(block, triblock, epoxidized; **fire-resistant resin compn. for making breakers and electromagnetic switches**)

IT Electric apparatus
(breakers; **fire-resistant resin compn. for making breakers and electromagnetic switches**)

IT Electric switches
(electromagnetic; **fire-resistant resin compn. for making breakers and electromagnetic switches**)

IT **Fire-resistant materials**
Fireproofing agents
(**fire-resistant resin compn. for making breakers and electromagnetic switches**)

IT Glass fibers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**fire-resistant resin compn. for making breakers and electromagnetic switches**)

IT Fluoropolymers, uses
Polycarbonates, uses
Polyesters, uses
Polyphosphazenes
Silsesquioxanes
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**fire-resistant resin compn. for making breakers and electromagnetic switches**)

IT Polymer blends
RL: TEM (Technical or engineered material use); USES (Uses)
(**fire-resistant resin compn. for making breakers and electromagnetic switches**)

IT Phenolic resins, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered

material use); USES (Uses)
 (novolak; **fire-resistant resin compn.** for making breakers and electromagnetic switches)

IT 471-34-1, KSS 1000, uses 14807-96-6, LMS 300, uses 26761-45-5, Cardura E 10 31870-48-1, CR 741 37640-57-6, MCA 139189-30-3, PX 200

RL: MOA (Modifier or additive use); USES (Uses)
 (**fire-resistant resin compn.** for making breakers and electromagnetic switches)

IT 9002-84-0, Teflon 6J 9003-54-7, Acrylonitrile-styrene copolymer 9010-86-0, A 709 24936-68-3, Iupilon S 3000, uses 24968-12-5, PBT 1100S 25037-45-0 26062-94-2 26702-05-6 29762-66-1, Acrylonitrile-glycidyl methacrylate-styrene copolymer 99752-88-2, Sumilit PR 53195

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (**fire-resistant resin compn.** for making breakers and electromagnetic switches)

IT 106107-54-4 694491-73-1

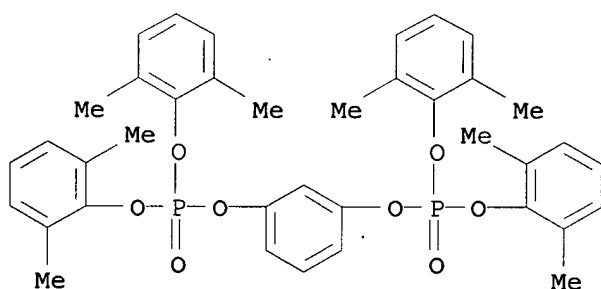
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (styrene-butadiene rubber, block, triblock, epoxidized; **fire-resistant resin compn.** for making breakers and electromagnetic switches)

IT 139189-30-3, PX 200

RL: MOA (Modifier or additive use); USES (Uses)
 (**fire-resistant resin compn.** for making breakers and electromagnetic switches)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



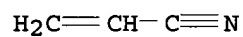
IT 9003-54-7, Acrylonitrile-styrene copolymer 9010-86-0, A 709 24968-12-5, PBT 1100S 26062-94-2 29762-66-1, Acrylonitrile-glycidyl methacrylate-styrene copolymer

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (**fire-resistant resin compn.** for making breakers and electromagnetic switches)

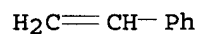
RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

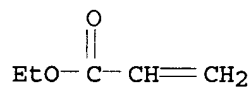
CM 1

CRN 107-13-1
CMF C3 H3 N

CM 2

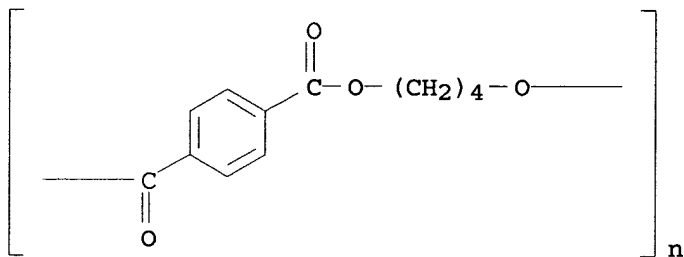
CRN 100-42-5
CMF C8 H8RN 9010-86-0 HCAPLUS
CN 2-Propenoic acid, ethyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 140-88-5
CMF C5 H8 O2

CM 2

CRN 74-85-1
CMF C2 H4RN 24968-12-5 HCAPLUS
CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



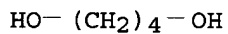
RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

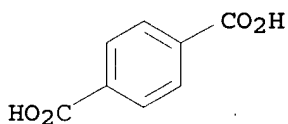
CMF C4 H10 O2



CM 2

CRN 100-21-0

CMF C8 H6 O4



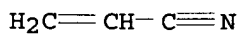
RN 29762-66-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethenylbenzene and 2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

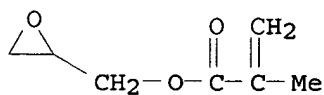
CMF C3 H3 N



CM 2

CRN 106-91-2

CMF C7 H10 O3



CM 3

CRN 100-42-5

CMF C8 H8

 $H_2C=CH-Ph$

L50 ANSWER 14 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:765945 HCAPLUS

DN 137:279993

TI **Fire-resistant polybutylene terephthalate composition and molded products**

IN Ishii, Hiromitsu; Kumaki, Jiro; Nagao, Takashi

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002294050	A2	20021009	JP 2001-94527	20010329
WO 2004029154	A1	20040408	WO 2002-JP9852	20020925
W: CN, KR, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
EP 1553138	A1	20050713	EP 2002-768047	20020925
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				

PRAI JP 2001-94527 A 20010329
 WO 2002-JP9852 W 20020925

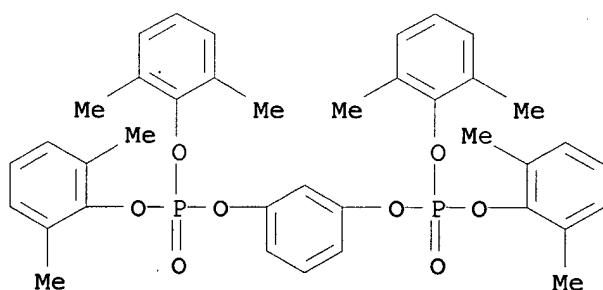
OS MARPAT 137:279993

AB A **halogen-free fire-resistant compn.**
 comprises (A) 100 parts of polybutylene terephthalate or
 polybutylene terephthalate and polyethylene terephthalate blend, (B)
 1-100 parts of a vinyl resin, (C) 1-100 parts of a phosphoric acid
 ester, (D) 1-150 parts of a cyanuric acid or isocyanuric acid salt

of a triazine compd., and (E) 0.1-10 parts of an alk. earth metal compd. Thus a compn. of this invention contained 100 parts polybutylene terephthalate, 25 parts of acrylonitrile-styrene copolymer, 40 parts of 1,3-phenylene tetrakis(2,6-dimethylphenyl) phosphate, 40 parts of melamine isocyanurate, and 3 parts of magnesium hydroxide. Mech. parts, elec. parts, and automobile parts made from the compn. are also claimed.

- IC ICM C08L067-02
ICS C08J005-00; C08K003-10; C08K005-1515; C08K005-3492;
C08K005-521; C08L101-00
- CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 38
- ST polybutylene terephthalate **fire** resistant compn;
acrylonitrile styrene copolymer **fire** resistant compn;
phenylene tetrakis dimethylphenyl phosphate **fire** resistant
compn; melamine isocyanurate **fire** resistant compn;
magnesium hydroxide **fire** resistant compn
- IT Glass fibers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(CS 3J948; **fire**-resistant polybutylene terephthalate
compn. and molded products)
- IT Silsesquioxanes
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(DC 4-7105; **fire**-resistant polybutylene terephthalate
compn. and molded products)
- IT Styrene-butadiene rubber, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(block, triblock, epoxidized, Epofriend A 1010; **fire**
-resistant polybutylene terephthalate compn. and molded products)
- IT Electric apparatus
Fire-resistant materials
Fireproofing agents
Machinery parts
(**fire**-resistant polybutylene terephthalate compn. and
molded products)
- IT Alkaline earth compounds
RL: MOA (Modifier or additive use); USES (Uses)
(**fire**-resistant polybutylene terephthalate compn. and
molded products)
- IT Epoxy resins, uses
Fluoropolymers, uses
Polycarbonates, uses
Polyesters, uses
Polyphosphazenes
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(**fire**-resistant polybutylene terephthalate compn. and
molded products)
- IT Polymer blends
RL: TEM (Technical or engineered material use); USES (Uses)
(**fire**-resistant polybutylene terephthalate compn. and
molded products)
- IT Phenolic resins, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered

- material use); USES (Uses)
(novolak; **fire-resistant** polybutylene terephthalate compn. and molded products)
- IT Automobiles
(parts; **fire-resistant** polybutylene terephthalate compn. and molded products)
- IT 1309-42-8, Magnesium hydroxide
RL: MOA (Modifier or additive use); USES (Uses)
(Kisuma 6E; **fire-resistant** polybutylene terephthalate compn. and molded products)
- IT 471-34-1, KSS 1000, uses 14807-96-6, LMS 300, uses 26761-45-5, Cardura E 10 31870-48-1, CR 741 37640-57-6, MCA 139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(**fire-resistant** polybutylene terephthalate compn. and molded products)
- IT 9002-84-0, Teflon 6J 9003-54-7, Acrylonitrile-styrene copolymer 9010-86-0, A 709 24936-68-3, Iupilon S 3000, uses 24968-12-5, PBT 1100S 25037-45-0, Bisphenol A-carbonic acid copolymer 25068-38-6, Epikote 828 26062-94-2, 1,4-Butanediol-terephthalic acid copolymer 26702-05-6 29762-66-1, Acrylonitrile-glycidyl methacrylate-styrene copolymer 99752-88-2, Sumilit PR 53195
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**fire-resistant** polybutylene terephthalate compn. and molded products)
- IT 106107-54-4 694491-73-1
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene rubber, block, triblock, epoxidized, Epofriend A 1010; **fire-resistant** polybutylene terephthalate compn. and molded products)
- IT 139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(**fire-resistant** polybutylene terephthalate compn. and molded products)
- RN 139189-30-3 HCAPLUS
- CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



- IT 9003-54-7, Acrylonitrile-styrene copolymer 9010-86-0, A 709 24968-12-5, PBT 1100S 26062-94-2,

1,4-Butanediol-terephthalic acid copolymer 29762-66-1,
Acrylonitrile-glycidyl methacrylate-styrene copolymer
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)

(fire-resistant polybutylene terephthalate compn. and
molded products)

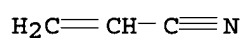
RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

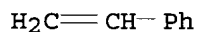
CMF C3 H3 N



CM 2

CRN 100-42-5

CMF C8 H8



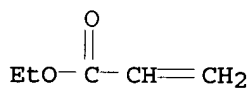
RN 9010-86-0 HCAPLUS

CN 2-Propenoic acid, ethyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 140-88-5

CMF C5 H8 O2



CM 2

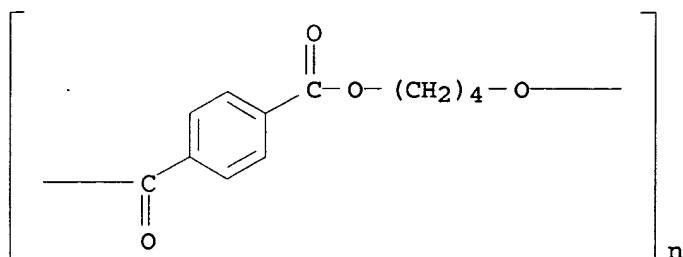
CRN 74-85-1

CMF C2 H4



RN 24968-12-5 HCAPLUS

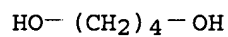
CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 26062-94-2 HCAPLUS
 CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA
 INDEX NAME)

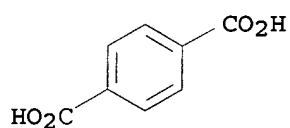
CM 1

CRN 110-63-4
 CMF C4 H10 O2



CM 2

CRN 100-21-0
 CMF C8 H6 O4



RN 29762-66-1 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with
 ethenylbenzene and 2-propenenitrile (9CI) (CA INDEX NAME)

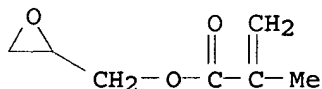
CM 1

CRN 107-13-1
 CMF C3 H3 N



CM 2

CRN 106-91-2
CMF C7 H10 O3



CM 3

CRN 100-42-5
CMF C8 H8

H₂C=CH-Ph

L50 ANSWER 15 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:765944 HCAPLUS
DN 137:279992
TI Fire-resistant polybutylene terephthalate composition and
molded products
IN Ishii, Hiromitsu; Nagao, Takashi; Kumaki, Jiro
PA Toray Industries, Inc., Japan
SO Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002294049	A2	20021009	JP 2001-94518	20010329

PRAI JP 2001-94518 20010329

OS MARPAT 137:279992

AB A halogen-free fire-resistant compn. comprises (A) 100 parts of polybutylene terephthalate or polybutylene terephthalate and polyethylene terephthalate blend, (B) 1-100 parts of an epoxy-modified styrene resin, (C) 1-100 parts of a phosphoric acid ester, and (D) 1-150 parts of a cyanuric acid or isocyanuric acid salt of a triazine compd., where the content of polyphenylene ethers and polyphenylene sulfides is below 5 parts. Thus a compn. of this invention contained 100 parts polybutylene terephthalate, 25 parts of acrylonitrile-glycidyl methacrylate-styrene copolymer, 40 parts of tri-Ph phosphate copolymer with bisphenol A, and 40 parts of melamine isocyanurate. Mech. parts, elec. parts, and automobile parts made from the compn. are also claimed.

IC ICM C08L067-02

ICS C08J005-00; C08K005-3492; C08K005-521; C08K007-02; C08L063-00

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 38

- ST polybutylene terephthalate **fire** resistant compn;
acrylonitrile glycidyl methacrylate styrene copolymer **fire**
resistant compn; triphenyl phosphate bisphenol A copolymer
fire resistant compn; melamine isocyanurate **fire**
resistant compn
- IT Styrene-butadiene rubber, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(block, triblock, epoxidized; **fire**-resistant
polybutylene terephthalate compn. and molded products)
- IT Electric apparatus
Fire-resistant materials
Fireproofing agents
Machinery parts
(**fire**-resistant polybutylene terephthalate compn. and
molded products)
- IT Glass fibers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**fire**-resistant polybutylene terephthalate compn. and
molded products)
- IT Epoxy resins, uses
Fluoropolymers, uses
Polycarbonates, uses
Polyesters, uses
Polyphosphazenes
Silsesquioxanes
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(**fire**-resistant polybutylene terephthalate compn. and
molded products)
- IT Polymer blends
RL: TEM (Technical or engineered material use); USES (Uses)
(**fire**-resistant polybutylene terephthalate compn. and
molded products)
- IT Phenolic resins, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(novolak; **fire**-resistant polybutylene terephthalate
compn. and molded products)
- IT Automobiles
(parts; **fire**-resistant polybutylene terephthalate
compn. and molded products)
- IT 14807-96-6, LMS 300, uses 31870-48-1, CR 741 37640-57-6, MCA
139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(**fire**-resistant polybutylene terephthalate compn. and
molded products)
- IT 9002-84-0, Teflon 6J 9010-86-0, A 709 24936-68-3,
Iupilon S 3000, uses 24968-12-5, PBT 1100S 25037-45-0,
Bisphenol A-carbonic acid copolymer 25068-38-6, Epikote 828
26062-94-2, 1,4-Butanediol-terephthalic acid copolymer
26702-05-6 29762-66-1, Acrylonitrile-glycidyl
methacrylate-styrene copolymer 99752-88-2, Sumilit PR 53195
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)

(fire-resistant polybutylene terephthalate compn. and molded products)

IT 106107-54-4 694491-73-1

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(styrene-butadiene rubber, block, triblock, epoxidized; fire-resistant polybutylene terephthalate compn. and molded products)

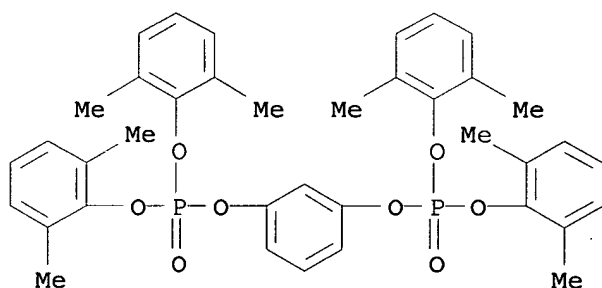
IT 139189-30-3, PX 200

RL: MOA (Modifier or additive use); USES (Uses)

(fire-resistant polybutylene terephthalate compn. and molded products)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



IT 9010-86-0, A 709 24968-12-5, PBT 1100S

26062-94-2, 1,4-Butanediol-terephthalic acid copolymer

29762-66-1, Acrylonitrile-glycidyl methacrylate-styrene copolymer

RL: PCF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(fire-resistant polybutylene terephthalate compn. and molded products)

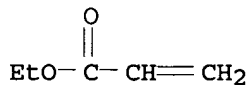
RN 9010-86-0 HCAPLUS

CN 2-Propenoic acid, ethyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 140-88-5

CMF C5 H8 O2



CM 2

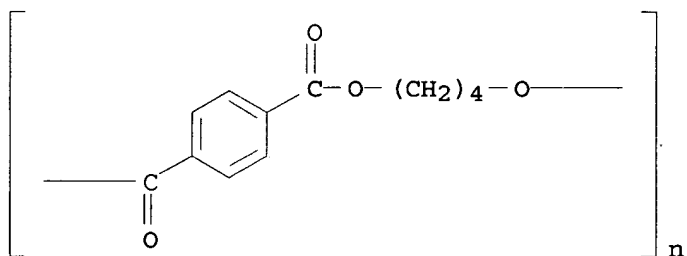
CRN 74-85-1

CMF C2 H4



RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



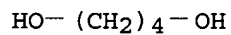
RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

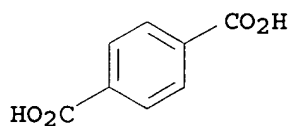
CMF C4 H10 O2



CM 2

CRN 100-21-0

CMF C8 H6 O4



RN 29762-66-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethenylbenzene and 2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

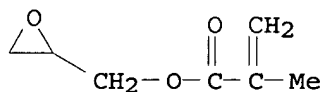
CMF C3 H3 N



CM 2

CRN 106-91-2

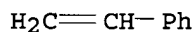
CMF C7 H10 O3



CM 3

CRN 100-42-5

CMF C8 H8



L50 ANSWER 16 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:566361 HCAPLUS

DN 137:125857

TI **Halogen-free fire-resistant resin**
composition containing triazine ring-bearing spiro-compound
flame retarder

IN Harashina, Hatsuhiko

PA Polyplastics Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 22 pp.

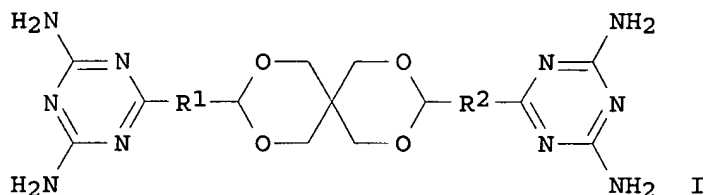
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2002212433	A2	20020731	JP 2001-5139	20010112
PRAI	JP 2001-5139		20010112		
OS	MARPAT 137:125857				
GI					



- AB Title compn. comprises (A) 100 wt. parts of base resins , (B) 0.1-500 wt. parts of a **flame** retarder such as a triazine-contg. spiro-compd. (formula I) or salts thereof, wherein R1 and R2 are independently alkylene, arylene, or aralkyl groups. Furthermore, the compn. may contain second **fire** retardants, oxidn. inhibitors, heat stabilizers, a dripping inhibitors, mold releasing agents, and fillers. The second **flame** retarder is selected from phosphorus-contg. compds., nitrogen-contg. compds., sulfur-contg. compds., silicon-contg. compds., alcs., inorg. compds., and arom. resins. Thus, a **fire-resistant** compn. was prepd. from nylon 66 (base resin)100, CTU guanamine {6,6'-(2,4,8,10-tetraoxaspiro[5.5]undecane-3,9-diyl-di-2,1-ethanediyl)bis (1,3,5-triazine-2,4-diamine)} 20, and Irganox 1010 (antioxidant) 0.3 part.
- IC ICM C08L101-00
ICS C08J005-00; C08K003-00; C08K003-32; C08K005-05; C08K005-16; C08K005-3492; C08K005-36; C08K005-49; C08K005-541
- CC 37-6 (Plastics Manufacture and Processing)
- ST nonhalogen **fire** resistant compn triazine ring spiro **flame** retarder
- IT Polymer blends
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(HIPS-poly(2,6-dimethyl-1,4-phenylene)oxide; manuf. of **halogen-free fire-resistant** resin compn. contg. triazine ring-bearing spiro-compd. **flame** retarder)
- IT Polyamides, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(base resins, Amilan CM; manuf. of **halogen-free fire-resistant** resin compn. contg. triazine ring-bearing spiro-compd. **flame** retarder)
- IT Polyamides, properties
Polycarbonates, properties
Polyesters, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(base resins; manuf. of **halogen-free fire-resistant** resin compn. contg. triazine ring-bearing spiro-compd. **flame** retarder)
- IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(dripping inhibitor; manuf. of **halogen-free fire-resistant** resin compn. contg. triazine ring-bearing

spiro-compd. **flame** retarder)

IT Glass fibers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(filler; manuf. of **halogen-free fire**
-resistant resin compn. contg. triazine ring-bearing spiro-compd.
flame retarder)

IT Alcohols, uses
Inorganic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(**fire** retardant; manuf. of **halogen-free fire**-resistant resin compn. contg.
triazine ring-bearing spiro-compd. **flame** retarder)

IT Spiro compounds
RL: MOA (Modifier or additive use); USES (Uses)
(guanamines, **fire** retardant; manuf. of **halogen-free fire**-resistant resin compn. contg.
triazine ring-bearing spiro-compd. **flame** retarder)

IT Antioxidants
Fillers
 Fire-resistant materials
 Fireproofing agents
Heat stabilizers
 (manuf. of **halogen-free fire**
 -resistant resin compn. contg. triazine ring-bearing spiro-compd.
 flame retarder)

IT Parting materials
 (mold-release agents, **fire** retardant; manuf. of
 halogen-free fire-resistant resin
 compn. contg. triazine ring-bearing spiro-compd. **flame**
 retarder)

IT Organic compounds, uses
RL: MOA (Modifier or additive use); USES (Uses)
 (nitrogen-contg., **fire** retardant; manuf. of
 halogen-free fire-resistant resin
 compn. contg. triazine ring-bearing spiro-compd. **flame**
 retarder)

IT Organic compounds, uses
RL: MOA (Modifier or additive use); USES (Uses)
 (phosphorus-contg., **fire** retardant; manuf. of
 halogen-free fire-resistant resin
 compn. contg. triazine ring-bearing spiro-compd. **flame**
 retarder)

IT Organic compounds, uses
RL: MOA (Modifier or additive use); USES (Uses)
 (silicon-contg., **fire** retardant; manuf. of
 halogen-free fire-resistant resin
 compn. contg. triazine ring-bearing spiro-compd. **flame**
 retarder)

IT Zeolite 3A
RL: MOA (Modifier or additive use); USES (Uses)
 (stabilizer; manuf. of **halogen-free**
 fire-resistant resin compn. contg. triazine ring-bearing
 spiro-compd. **flame** retarder)

IT Organic compounds, uses
RL: MOA (Modifier or additive use); USES (Uses)
 (sulfur-contg., **fire** retardant; manuf. of

- halogen-free fire-resistant resin**
compn. contg. triazine ring-bearing spiro-compd. **flame**
retarder)
- IT 6683-19-8, Irganox 1010 36443-68-2, Irganox 245
RL: MOA (Modifier or additive use); USES (Uses)
(antioxidant; manuf. of **halogen-free**
fire-resistant resin compn. contg. triazine ring-bearing
spiro-compd. **flame** retarder)
- IT 25038-54-4, Nylon 6, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(base resins, Amilan CM; manuf. of **halogen-free**
fire-resistant resin compn. contg. triazine ring-bearing
spiro-compd. **flame** retarder)
- IT 9003-53-6, Polystyrene
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(base resins, Toyo Styrol GP-G 200C; manuf. of **halogen-**
free fire-resistant resin compn. contg.
triazine ring-bearing spiro-compd. **flame** retarder)
- IT 9003-54-7, Cevian JD 24936-68-3, Panlite L 1225,
properties 24938-67-8, Poly(2,6-dimethyl-1,4-phenylene)oxide
24968-12-5, Duranex 25037-45-0 25038-59-9,
Bellpet EFG 10, properties 25085-53-4, Noblen X 101A 25134-01-4,
Poly(2,6-dimethyl-1,4-phenylene)oxide 26062-94-2
32131-17-2, Nylon 66, properties 126730-46-9, Duracon M 90-44
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(base resins; manuf. of **halogen-free**
fire-resistant resin compn. contg. triazine ring-bearing
spiro-compd. **flame** retarder)
- IT 9002-84-0, Polytetrafluoroethylene
RL: MOA (Modifier or additive use); USES (Uses)
(dripping inhibitor; manuf. of **halogen-free**
fire-resistant resin compn. contg. triazine ring-bearing
spiro-compd. **flame** retarder)
- IT 1314-56-3, Phosphoric anhydride, uses 7723-14-0, Novaexcel F5,
uses 7789-78-8, Calcium hydride 12767-90-7, **Fire Brake**
ZB 24979-70-2, Maruka Lyncur MS 1P 26834-02-6, Milex XL 225
93981-32-9, CR 741C 139189-30-3, PX 200 172827-17-7,
Sumilit PR 53647 184378-36-7, Terraju C60 243144-78-7, PMP 100
RL: MOA (Modifier or additive use); USES (Uses)
(**fire** retardant auxiliary; manuf. of **halogen-**
free fire-resistant resin compn. contg.
triazine ring-bearing spiro-compd. **flame** retarder)
- IT 6542-67-2D, Triazines, derivs.
RL: MOA (Modifier or additive use); USES (Uses)
(**fire** retardant; manuf. of **halogen-**
free fire-resistant resin compn. contg.
triazine ring-bearing spiro-compd. **flame** retarder)
- IT 108-80-5D, Isocyanuric acid, reaction products with isocyanuric acid
22535-90-6, CTU guanamine 22535-90-6D, CTU guanamine, reaction
products with isocyanuric acid
RL: MOA (Modifier or additive use); USES (Uses)
(spiro guanamine compd., **flame** retarders; manuf. of
halogen-free fire-resistant resin

compn. contg. triazine ring-bearing spiro-compd. **flame**
retarder)

IT 11097-59-9, DHT 4A
RL: MOA (Modifier or additive use); USES (Uses)
(stabilizer, DHT 4A; manuf. of **halogen-free**
fire-resistant resin compn. contg. triazine ring-bearing
spiro-compd. **flame** retarder)

IT 38613-77-3, Tetrakis(2,4-di-tert-butylphenyl)-4,4'-
biphenylenediphosphonite
RL: MOA (Modifier or additive use); USES (Uses)
(stabilizer, SandoStab P-EPQ; manuf. of **halogen-**
free fire-resistant resin compn. contg.
triazine ring-bearing spiro-compd. **flame** retarder)

IT 80693-00-1 153550-59-5, SandoStab P-EPQ
RL: MOA (Modifier or additive use); USES (Uses)
(stabilizer; manuf. of **halogen-free**
fire-resistant resin compn. contg. triazine ring-bearing
spiro-compd. **flame** retarder)

IT 9003-54-7, Cevian JD 24968-12-5, Duranex
25038-59-9, Bellpet EFG 10, properties 26062-94-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(base resins; manuf. of **halogen-free**
fire-resistant resin compn. contg. triazine ring-bearing
spiro-compd. **flame** retarder)

RN 9003-54-7 HCAPLUS
CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N

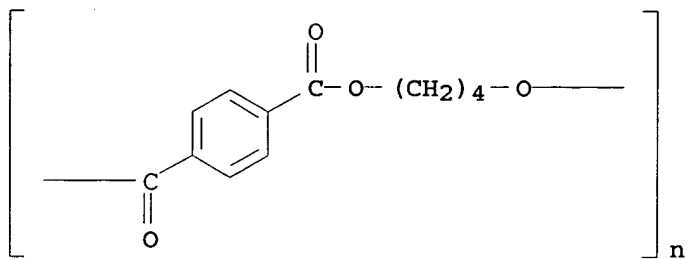


CM 2

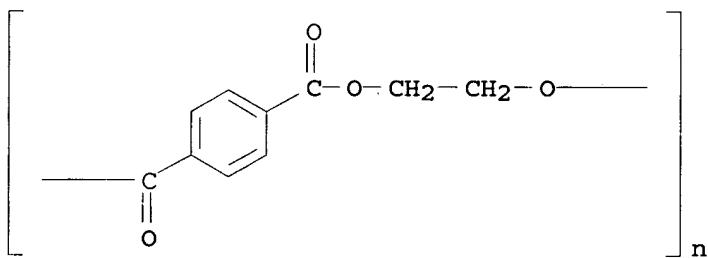
CRN 100-42-5
CMF C8 H8



RN 24968-12-5 HCAPLUS
CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)



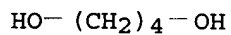
RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)

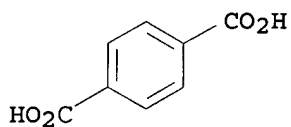
RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA
INDEX NAME)

CM 1

CRN 110-63-4
CMF C4 H10 O2

CM 2

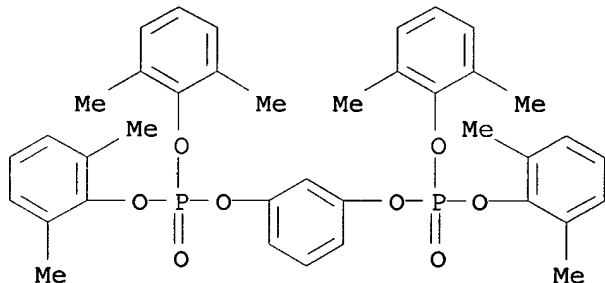
CRN 100-21-0
CMF C8 H6 O4

IT 139189-30-3, PX 200

MEI HUANG EIC1700 REM4B28 571-272-3952

RL: MOA (Modifier or additive use); USES (Uses)
 (fire retardant auxiliary; manuf. of halogen-free fire-resistant resin compn. contg. triazine ring-bearing spiro-compd. flame retarder)

RN 139189-30-3 HCAPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



WO 01 94472

L50 ANSWER 17 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2002:566360 HCAPLUS
 DN 137:125856
 TI **Halogen-free fire-resistant resin**
 composition containing formaldehyde polymer fire retardant
 IN Harashina, Hatsuhiko
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokyo Koho, 21 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002212432	A2	20020731	JP 2001-5138	20010112

PRAI JP 2001-5138 20010112
 AB Title compn. comprises (A) base resins 100 wt parts, (B) fire retardants 0.1-300 wt. parts. The fire retardant comprises (I) formaldehyde polymer such as polymer polyacetal and/or polydioxolane and (II) nitrogen-contg. compd. and/or arom. resin. The nitrogen-contg. compd. is selected from (a) amino group-contg. ring compd., (b) urea compd., and (c) guanidino compd. The arom. resin is a resin having arom. ring with hydroxyl group and/or amino group on a main chain or a side chain. Thus, a fire-resistant compn. was prepd. from Amilan CM (Nylon 6) 100, BellPet EFG 10 1, Melam 7, PX 200 (fire retardant auxiliary) 10, Irganox 1010 (antioxidant) 0.3, and polytetrafluoroethylene (dripping inhibitor) 0.5 part.
 IC ICM C08L101-00
 ICS C08J005-00; C08K003-00; C08K003-32; C08K005-13; C08K005-16; C08K005-36; C08K005-49; C08K005-541; C08L059-00; C08L061-02;

C08L067-02; C09K021-14

- CC 37-6 (Plastics Manufacture and Processing)
- ST halogen **fire** resistant resin compn formaldehyde polymer retardant
- IT Polyamides, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Amilan CM, base resins; manuf. of **halogen-free fire-resistant resin compn. contg. formaldehyde polymer fire retardant**)
- IT Acrylic polymers, properties
Polyamides, properties
Polycarbonates, properties
Polyesters, properties
Polyethers, properties
Polyolefins
Polyoxyphenylenes
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(base resin; manuf. of **halogen-free fire-resistant resin compn. contg. formaldehyde polymer fire retardant**)
- IT Polymer blends
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(base resins, HIPS-poly(2,6-dimethyl-1,4-phenylene)oxide; manuf. of **halogen-free fire-resistant resin compn. contg. formaldehyde polymer fire retardant**)
- IT Polyesters, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(base resins; manuf. of **halogen-free fire-resistant resin compn. contg. formaldehyde polymer fire retardant**)
- IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(dripping inhibitor; manuf. of **halogen-free fire-resistant resin compn. contg. formaldehyde polymer fire retardant**)
- IT Glass fibers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(filler; manuf. of **halogen-free fire-resistant resin compn. contg. formaldehyde polymer fire retardant**)
- IT Antioxidants
Fillers
Fire-resistant materials
Fireproofing agents
Stabilizing agents
(manuf. of **halogen-free fire-resistant resin compn. contg. formaldehyde polymer fire retardant**)
- IT Metals, uses
RL: MOA (Modifier or additive use); USES (Uses)
(manuf. of **halogen-free fire**)

- resistant resin compn. contg. formaldehyde polymer **fire retardant**)
- IT Polyoxymethylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(manuf. of **halogen-free fire**
-resistant resin compn. contg. formaldehyde polymer **fire**
retardant)
- IT Organic compounds, uses
RL: MOA (Modifier or additive use); USES (Uses)
(phosphorus-contg.; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)
- IT Vinyl compounds, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(polymers, base resin; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)
- IT Organic compounds, uses
RL: MOA (Modifier or additive use); USES (Uses)
(silicon-contg.; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)
- IT Acrylic polymers, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(styrene-contg., base resin; manuf. of **halogen-**
free fire-resistant resin compn. contg.
formaldehyde polymer fire retardant)
- IT Organic compounds, uses
RL: MOA (Modifier or additive use); USES (Uses)
(sulfur-contg.; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)
- IT 25038-54-4, Nylon 6, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(Amilan CM, base resins; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)
- IT 25067-64-5, CX-PD
RL: MOA (Modifier or additive use); USES (Uses)
(CX-PD, **fire retardant-contg.**; manuf. of
halogen-free fire-resistant resin
compn. contg. formaldehyde polymer **fire retardant**)
- IT 9003-53-6, Polystyrene
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(Toyo Styrol GP-G 200C, base resins; manuf. of **halogen-**
free fire-resistant resin compn. contg.
formaldehyde polymer fire retardant)
- IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611
24936-68-3, Panlite L 1225, properties 24938-67-8,
Poly(2,6-dimethyl-1,4-phenylene)oxide 24968-12-5, Duranex
25037-45-0 25038-59-9, BellPet EFG 10, properties
25134-01-4, Poly(2,6-dimethyl-1,4-phenylene)oxide 26062-94-2

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (base resins; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)

IT 9002-84-0, Polytetrafluoroethylene
 RL: MOA (Modifier or additive use); USES (Uses)
 (dripping inhibitor; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)

IT 1314-56-3, Phosphoric anhydride, uses 7723-14-0, Novared 140, uses
 7789-78-8, Calcium hydride 12767-90-7, **Fire Brake ZB**
 93981-32-9, CR 741C 139189-30-3, PX 200 184378-36-7,
 TerraJu C 60
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fire retardant auxiliary; manuf. of halogen-**
free fire-resistant resin compn. contg.
formaldehyde polymer fire retardant)

IT 3576-88-3, Melam 26834-02-6, Milex XL 225 28726-47-8,
 Poly(oxymethyleneoxy-1,2-ethanediyl) 37640-57-6, MC 610
 117313-45-8, Epikote 1004K 126730-46-9, Duracon M 90-44
 172827-17-7, PR 53647
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fire retardant-contg.; manuf. of halogen-**
free fire-resistant resin compn. contg.
formaldehyde polymer fire retardant)

IT 50-00-0D, Formaldehyde, polymers 6683-19-8, Irganox 1010
 RL: MOA (Modifier or additive use); USES (Uses)
 (manuf. of **halogen-free fire**
-resistant resin compn. contg. formaldehyde polymer fire
retardant)

IT 38613-77-3, Tetrakis(2,4-di-tert-butylphenyl)-4,4'-
 biphenylenediphosphonite 80693-00-1 153550-59-5, Sandostab P-EPQ
 RL: MOA (Modifier or additive use); USES (Uses)
 (stabilizer; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)

IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611
 24968-12-5, Duranex 25038-59-9, BellPet EFG 10,
 properties 26062-94-2
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (base resins; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)

RN 9003-54-7 HCAPLUS
 CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

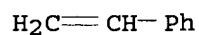
CRN 107-13-1
 CMF C3 H3 N



CM 2

CRN 100-42-5

CMF C8 H8



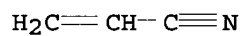
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CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

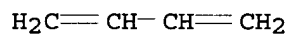
CMF C3 H3 N



CM 2

CRN 106-99-0

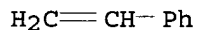
CMF C4 H6



CM 3

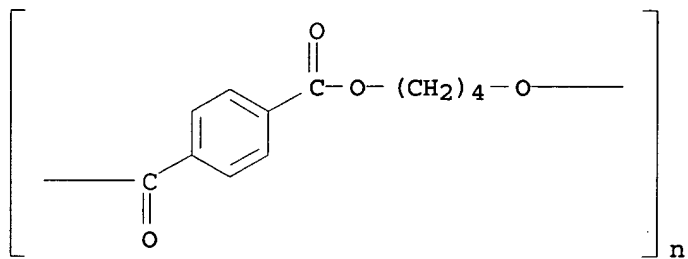
CRN 100-42-5

CMF C8 H8



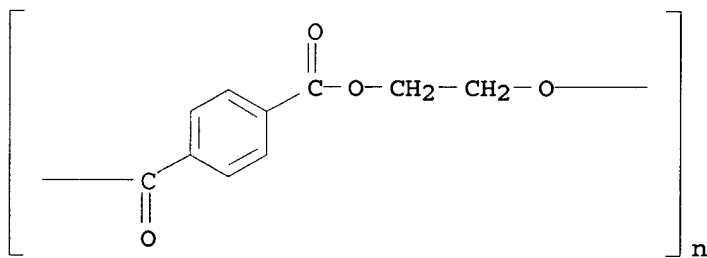
RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)



RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



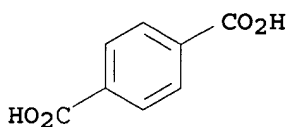
RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4
CMF C4 H10 O2HO-(CH₂)₄-OH

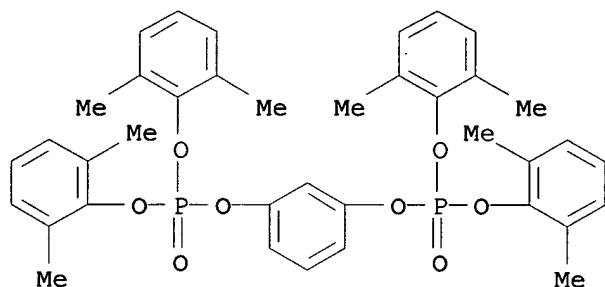
CM 2

CRN 100-21-0
CMF C8 H6 O4

IT 139189-30-3, PX 200

RL: MOA (Modifier or additive use); USES (Uses)
 (fire retardant auxiliary; manuf. of **halogen-free fire-resistant resin compn. contg.**
formaldehyde polymer fire retardant)

RN 139189-30-3 HCAPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



L50 ANSWER 18 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:268661 HCAPLUS

DN 136:295556

TI **Halogen-free flame-retardant**
 thermoplastic resin compositions

IN Harashina, Hatsuhiko

PA Polyplastics Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 30 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002105336	A2	20020410	JP 2001-226761	20010726

PRAI JP 2000-225243 A 20000726

AB The compns. useful for molding contain (A) thermoplastic resins and (B) **fireproofing** agents which comprise polyphenylene oxide resins, phosphate esters and cyclic urea compds. Thus, a compn. contg. Duranex (PBT) 70, poly(2,6-dimethyl-1,4-phenylene oxide) 30, PX 200 (a phosphate-type **fireproofing** agent) 18, acetylene urea 15 parts and other additives gave injection molded test pieces with UL94 flammability rating V 0 and no blooming.

IC ICM C08L101-00

ICS C08J005-00; C08K005-34; C08K005-521; C08L071-12; C09K021-02; C09K021-04; C09K021-14

CC 37-3 (Plastics Manufacture and Processing)

ST blooming redn **halogen free flame**
 retardant thermoplastic resin molding; acetylene urea
fireproofing agent thermoplastic resin molding compn;
 polyester polyoxyphenylene **flame** retardant thermoplastic

resin molding compn; cyclic urea acetylene compd
fireproofing agent thermoplastic resin molding

IT Polyoxyphenylenes
 RL: MOA (Modifier or additive use); POF (Polymer in formulation);
 PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (fireproofing agent; halogen-free
 flame-retardant thermoplastic resin compns.)

IT **Fireproofing** agents
 (halogen-free flame-retardant
 thermoplastic resin compns.)

IT Epoxy resins, properties
 Polycarbonates, properties
 Polyesters, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (halogen-free flame-retardant
 thermoplastic resin compns.)

IT 9003-53-6, GP-G 200C
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (Toyo Styrol GP 14L; halogen-free
 flame-retardant thermoplastic resin compns.)

IT 69-93-2, Uric acid, uses 496-46-8, Acetylene urea 5945-33-5,
 Fyrolflex BDP 18276-12-5 57583-54-7, Reofos RDP 83919-56-6
 97964-60-8 124784-27-6, PX 201 139189-30-3, PX 200
 147263-99-8, PX 202
 RL: MOA (Modifier or additive use); USES (Uses)
 (fireproofing agent; halogen-free
 flame-retardant thermoplastic resin compns.)

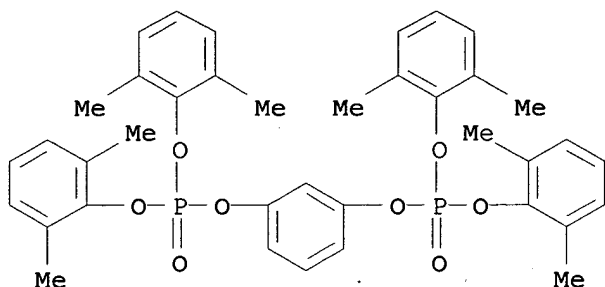
IT 24938-67-8, YPX-100F 25134-01-4, Poly(2,6-dimethyl-1,4-phenylene
 oxide)
 RL: MOA (Modifier or additive use); POF (Polymer in formulation);
 PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (fireproofing agent; halogen-free
 flame-retardant thermoplastic resin compns.)

IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611
 24936-68-3, Panlite L 1225, properties 24968-12-5,
 Poly(butylene terephthalate) 25037-45-0, Bisphenol A-carbonic acid
 copolymer 25038-59-9, Bellpet EFG 10, properties
 25068-38-6, Pheno Tohto YP 50 26062-94-2, Butylene
 glycol-terephthalic acid copolymer 26590-50-1, U-Polymer
 U-100 30580-17-7, Butylene glycol-isophthalic
 acid-terephthalic acid copolymer 117313-45-8, Epikote 1004K
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (halogen-free flame-retardant
 thermoplastic resin compns.)

IT 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (fireproofing agent; halogen-free
 flame-retardant thermoplastic resin compns.)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611
 24968-12-5, Poly(butylene terephthalate) 25038-59-9
 , Bellpet EFG 10, properties 26062-94-2, Butylene
 glycol-terephthalic acid copolymer 26590-50-1, U-Polymer
 U-100 30580-17-7, Butylene glycol-isophthalic
 acid-terephthalic acid copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (halogen-free flame-retardant
 thermoplastic resin compns.)
 RN 9003-54-7 HCAPLUS
 CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

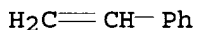
CM 1

CRN 107-13-1
 CMF C3 H3 N



CM 2

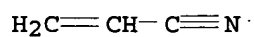
CRN 100-42-5
 CMF C8 H8



RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

CM 1

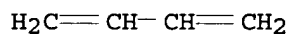
CRN 107-13-1
 CMF C3 H3 N



CM 2

CRN 106-99-0

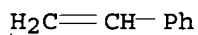
CMF C4 H6



CM 3

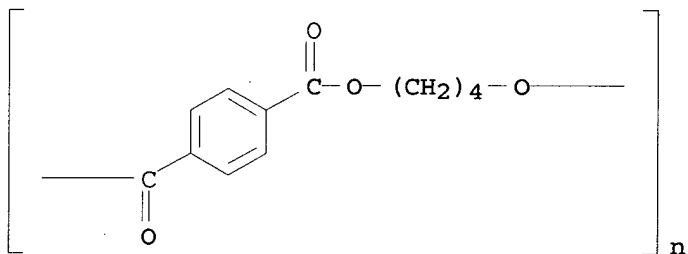
CRN 100-42-5

CMF C8 H8



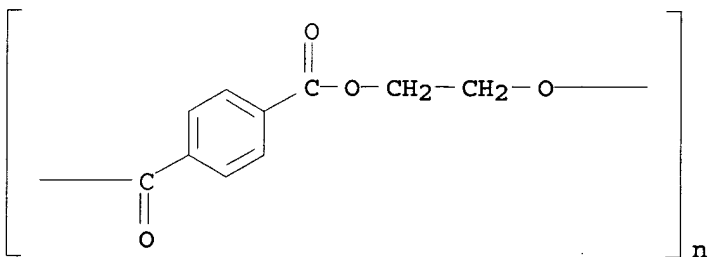
RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



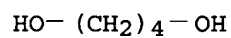
RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

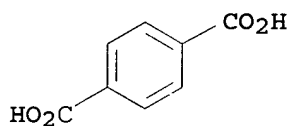
CMF C4 H10 O2



CM 2

CRN 100-21-0

CMF C8 H6 O4



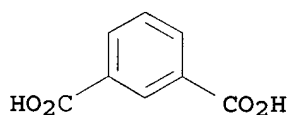
RN 26590-50-1 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5

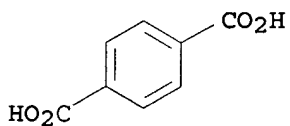
CMF C8 H6 O4



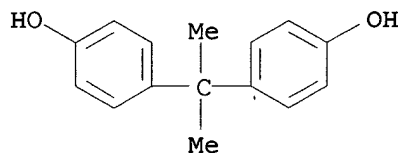
CM 2

CRN 100-21-0

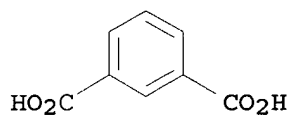
CMF C8 H6 O4



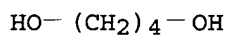
CM 3

CRN 80-05-7
CMF C15 H16 O2RN 30580-17-7 HCAPLUS
CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 1,4-butanediol (9CI) (CA INDEX NAME)

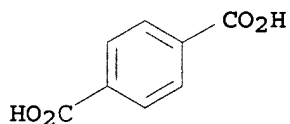
CM 1

CRN 121-91-5
CMF C8 H6 O4

CM 2

CRN 110-63-4
CMF C4 H10 O2

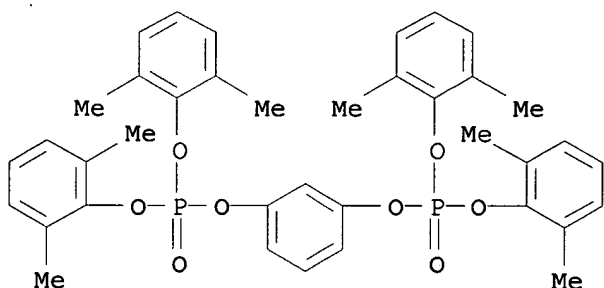
CM 3

CRN 100-21-0
CMF C8 H6 O4

AN 2002:265014 HCAPLUS
 DN 136:295548
 TI **Halogen-free flame-retardant**
 thermoplastic resin compositions
 IN Harashina, Hatsuhiko
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 31 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2002105335	A2	20020410	JP 2001-226760	200107 26
PRAI	JP 2000-225244	A	20000726		
AB	The compns. useful for molding contain (A) thermoplastic resins and (B) fireproofing agents which comprise polyphenylene oxide resins, phosphate esters and salts of N-contg. cyclic compds. with H2SO4, sulfonic acid or/and boric acid. Thus, a compn. contg. Duranex (PBT) 70, poly(2,6-dimethyl-1,4-phenylene oxide) 30, PX 200 (a phosphate-type fireproofing agent) 18, Apinon 901 (melamine sulfate type fireproofing agent) 15 parts and other additives gave injection molded test pieces with UL94 flammability rating V 0 and no blooming.				
IC	ICM C08L101-00 ICS C08J005-00; C08K005-34; C08K005-521; C08L071-12; C09K021-10; C09K021-12				
CC	37-3 (Plastics Manufacture and Processing)				
ST	blooming redn halogen free flame retardant thermoplastic resin molding; melamine sulfate fireproofing agent thermoplastic resin molding compn; polyester polyoxyphenylene flame retardant thermoplastic resin molding compn; sulfonic acid boric acid compn flame retardant thermoplastic molding				
IT	Fireproofing agents (halogen-free flame -retardant thermoplastic resin compns.)				
IT	Polyoxyphenylenes RL: MOA (Modifier or additive use); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (halogen-free flame -retardant thermoplastic resin compns.)				
IT	Epoxy resins, properties Polycarbonates, properties Polyesters, properties Polymer blends RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (halogen-free flame -retardant thermoplastic resin compns.)				
IT	9003-53-6, GP-G 200C RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical				

- or engineered material use); USES (Uses)
(Toyo Styrol GP 14L; **halogen-free flame-retardant** thermoplastic resin compns.)
- IT 364728-71-2, MMS 200
RL: MOA (Modifier or additive use); USES (Uses)
(**fireproofing agent**, MMS 200; **halogen-free flame-retardant** thermoplastic resin compns.)
- IT 5945-33-5, Fyrolflex BDP 53587-44-3, Melamine borate 57583-54-7, Reofos RDP 84962-53-8, Apinon 901 124784-27-6, PX 201 139189-30-3, PX 200 147263-99-8, PX 202
RL: MOA (Modifier or additive use); USES (Uses)
(**fireproofing agent**; **halogen-free flame-retardant** thermoplastic resin compns.)
- IT 24938-67-8, YPX-100F 25134-01-4, Poly(2,6-dimethyl-1,4-phenylene oxide)
RL: MOA (Modifier or additive use); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**halogen-free flame-retardant** thermoplastic resin compns.)
- IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611 24936-68-3, Panlite L 1225, properties 24968-12-5, Poly(butylene terephthalate) 25037-45-0, Bisphenol A-carbonic acid copolymer 25038-59-9, Bellpet EFG 10, properties 25068-38-6, Pheno Tohto YP 50 26062-94-2, Butylene glycol-terephthalic acid copolymer 26590-50-1, U-Polymer U-100 30580-17-7, Butylene glycol-isophthalic acid-terephthalic acid copolymer 117313-45-8, Epikote 1004K
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**halogen-free flame-retardant** thermoplastic resin compns.)
- IT 139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(**fireproofing agent**; **halogen-free flame-retardant** thermoplastic resin compns.)
- RN 139189-30-3 HCAPLUS
- CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



- IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611 24968-12-5, Poly(butylene terephthalate) 25038-59-9

, Bellpet EFG 10, properties 26062-94-2, Butylene glycol-terephthalic acid copolymer 26590-50-1, U-Polymer U-100 30580-17-7, Butylene glycol-isophthalic acid-terephthalic acid copolymer

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(halogen-free flame-retardant

thermoplastic resin compns.)

RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

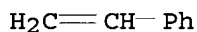
CMF C3 H3 N



CM 2

CRN 100-42-5

CMF C8 H8



RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

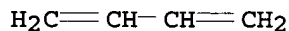
CMF C3 H3 N



CM 2

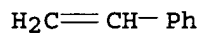
CRN 106-99-0

CMF C4 H6

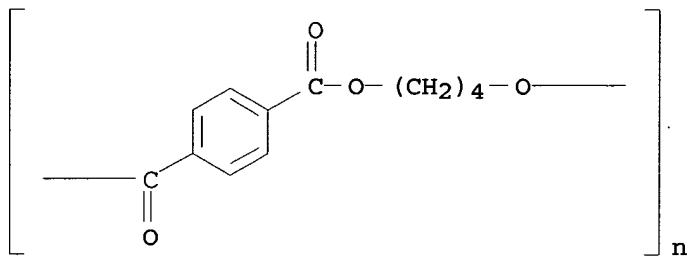


CM 3

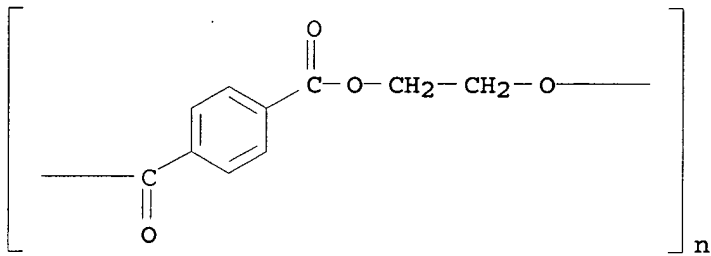
CRN 100-42-5
CMF C8 H8



RN 24968-12-5 HCAPLUS
CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 25038-59-9 HCAPLUS
CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 26062-94-2 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

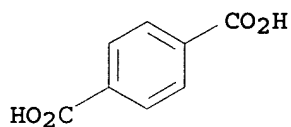
CRN 110-63-4
CMF C4 H10 O2



CM 2

CRN 100-21-0

CMF C8 H6 O4



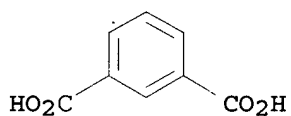
RN 26590-50-1 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5

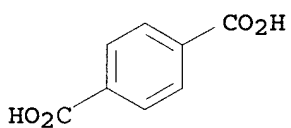
CMF C8 H6 O4



CM 2

CRN 100-21-0

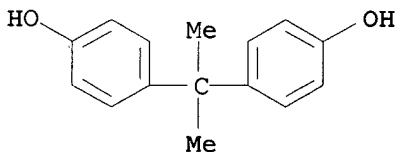
CMF C8 H6 O4



CM 3

CRN 80-05-7

CMF C15 H16 O2



RN 30580-17-7 HCAPLUS

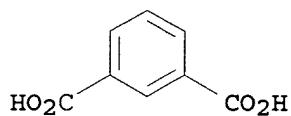
CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic

acid and 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5

CMF C8 H6 O4



CM 2

CRN 110-63-4

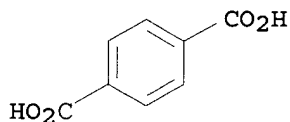
CMF C4 H10 O2

HO-(CH₂)₄-OH

CM 3

CRN 100-21-0

CMF C8 H6 O4



L50 ANSWER 20 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2002:265012 HCAPLUS
 DN 136:295593
 TI Fire-resistant thermoplastic resin compositions containing
 nonhalogen fire retardants
 IN Harashina, Hatsuhiko
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 30 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2002105334	A2	20020410	JP 2001-226759	200107

26

PRAI JP 2000-225245 A 20000726

AB Title compns. comprise (A) thermoplastic resins and (B) fire retardants comprising polyphenylene oxide type resins, phosphate esters, and polyphosphoric acid amides. Thus, a compn. comprising Duranex 70, poly(2,6-dimethyl-1,4-phenylene) oxide 30, PX 200 15, Sumisafe PM 15, Irganox 1010 0.3, ADK Stab PEP 36 0.3, and polytetrafluoroethylene 0.5 parts gave good fire and blooming resistance.

IC ICM C08L101-00
ICS C08J005-00; C08K005-521; C08K005-5399; C08L071-12; C08L085-02; C09K021-12

CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 38

ST fire resistant thermoplastic compn nonhalogen prepn; polyphenylene oxide phosphate polyphosphoric acid amide fire retardant

IT Polyphosphoric acids
RL: MOA (Modifier or additive use); USES (Uses)
(amides, fire retardant; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT Polyphosphoric acids
RL: MOA (Modifier or additive use); USES (Uses)
(ammonium salts, Exolit AP 462, fire retardant; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT Polyoxyphenylenes
RL: MOA (Modifier or additive use); USES (Uses)
(fire retardant; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT Fire-resistant materials
Fireproofing agents
(fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT **Acrylic polymers**, uses
Polyamides, uses
Polyesters, uses
Polyolefins
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT Molded plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

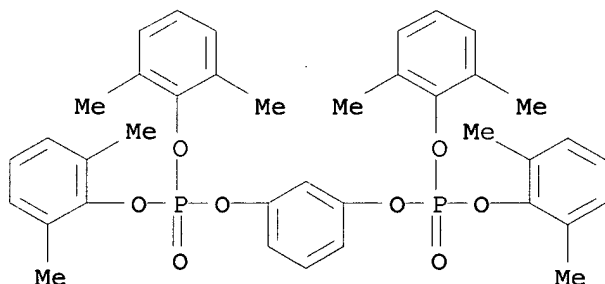
IT Vinyl compounds, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polymers; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT Plastics, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(thermoplastics; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT 99550-96-6, Taien S
RL: MOA (Modifier or additive use); USES (Uses)

(fire retardant, optionally surface treated with epoxy resin; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

- IT 66813-75-0, Sumisafe PM
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire retardant, optionally surface treated with **phenolic resin**; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)
- IT 5945-33-5, Fyrolflex BDP 24938-67-8, YPX 100F 25134-01-4, 2,6-Dimethyl **phenol homopolymer** 57583-54-7, Reofos RDP 124784-27-6, PX 201 **139189-30-3**, PX 200 147263-99-8, PX 202
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire retardant; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)
- IT 55097-77-3
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)
- IT 24968-12-5, Duranex 25038-59-9, Bellpet EFG 10, uses 26062-94-2 30580-17-7, 1,4-Butanediol-isophthalic acid-terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)
- IT **139189-30-3**, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire retardant; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)
- RN 139189-30-3 HCAPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)

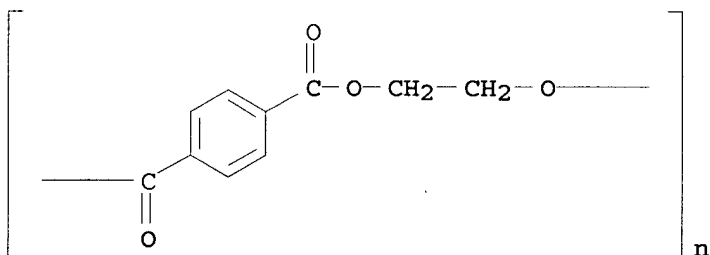


L50 ANSWER 21 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2002:147808 HCAPLUS
 DN 136:200986
 TI Antistatic agent compositions for plastics with long service life
 IN Nakahara, Yutaka; Horinouchi, Masatoshi
 PA Asahi Denka Kogyo K. K., Japan
 SO Jpn. Kokai Tokyo Koho, 15 pp.
 CODEN: JKXXAF

DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2002060734	A2	20020226	JP 2001-166487	20010601
PRAI	JP 2000-174148	A	20000609		
OS	MARPAT 136:200986				
AB	The compns. contain (A) compd. having [XCH ₂] units [X = optionally halogen- or hydrocarbyl-substituted alkoxyated phenol or its ether, ester, isocyanate or anionic hydrophilic group-blocked products], and (B) low mol.-wt. org. anionic compds., and optionally (poly)phosphate compds. Thus, a resin compn. contg. PET 100, ADK Stab AO 60 (antioxidant) 0.1, ADK Stab 2112 (antioxidant) 0.1 and compd. [XCH ₂] ₂₀ [X = 30:1 ethoxylated p-(2-phenylisopropylphenol)] 5 parts gave molded test pieces with surface resistivities 8.9x10 ¹² , 1.4x10 ¹² , 2.0x10 ¹² and 2.0x10 ¹² Ω/box 10 min after molding, 7 days after molding, 7 days after molding and washing and 14 days after molding and heating at 80°, resp.				
IC	ICM C09K003-16 ICS C09K003-16; C08K005-00; C08K005-521; C08L061-14; C08L101-00; C09K021-12				
CC	37-2 (Plastics Manufacture and Processing)				
ST	plastic molding antistatic agent ethoxylated phenolic resin service life				
IT	Polycarbonates, properties RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (ABS alloy; antistatic agent compns. for plastics with long service life)				
IT	Sulfonic acids, uses RL: MOA (Modifier or additive use); USES (Uses) (alkanesulfonic, salts, C9-13, antistatic co-agent; antistatic agent compns. for plastics with long service life)				
IT	Antistatic agents (antistatic agent compns. for plastics with long service life)				
IT	Polyesters, properties Polymer blends RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (antistatic agent compns. for plastics with long service life)				
IT	Polyamides, properties RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (polypropylene blends; antistatic agent compns. for plastics with long service life)				
IT	25038-59-9, PET polyester, properties RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (antistatic agent compns. for plastics with long service life)				
IT	124895-94-9, Ethylene oxide-formaldehyde-p-nonylphenol-propylene oxide graft copolymer 237391-36-5, p-Cumylphenol-Ethylene oxide-formaldehyde graft copolymer				

- 401620-63-1**, p-Butylphenol-ethylene oxide-formaldehyde graft copolymer methyl ether **401620-64-2**, Ethylene oxide-formaldehyde-p-nonylphenol graft copolymer octanoate ester
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (antistatic agent; antistatic agent compns. for plastics with long service life)
- IT 577-11-7, Sodium di-2-ethylhexyl sulfosuccinate 7631-86-9D, Tokusil NP, alkyl ether, uses 25155-30-0, Sodium dodecylbenzenesulfonate 27177-77-1, Potassium dodecylbenzenesulfonate 41675-87-0D, Polyethylene glycol monosulfate sodium salt, C12-13 alkyl ether 69980-69-4
 RL: MOA (Modifier or additive use); USES (Uses)
 (antistatic co-agent; antistatic agent compns. for plastics with long service life)
- IT 9003-07-0, Polypropylene
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (nylon blends; antistatic agent compns. for plastics with long service life)
- IT 9003-56-9, ABS resin
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (polycarbonate alloy; antistatic agent compns. for plastics with long service life)
- IT 6683-19-8, ADK Stab AO 60 31570-04-4, ADK Stab 2112 139189-30-3, ADK Stab FP 500
 RL: MOA (Modifier or additive use); USES (Uses)
 (stabilizer; antistatic agent compns. for plastics with long service life)
- IT 25038-59-9, PET polyester, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (antistatic agent compns. for plastics with long service life)
- RN 25038-59-9 HCAPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



- IT 124895-94-9, Ethylene oxide-formaldehyde-p-nonylphenol-propylene oxide graft copolymer 237391-36-5, p-Cumylphenol-Ethylene oxide-formaldehyde graft copolymer **401620-63-1**, p-Butylphenol-ethylene oxide-formaldehyde graft copolymer methyl ether **401620-64-2**, Ethylene oxide-formaldehyde-p-nonylphenol graft copolymer octanoate ester
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)

(antistatic agent; antistatic agent compns. for plastics with long service life)

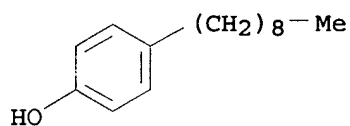
RN 124895-94-9 HCAPLUS

CN Formaldehyde, polymer with methyloxirane, 4-nonylphenol and oxirane, graft (9CI) (CA INDEX NAME)

CM 1

CRN 104-40-5

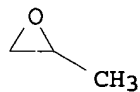
CMF C15 H24 O



CM 2

CRN 75-56-9

CMF C3 H6 O



CM 3

CRN 75-21-8

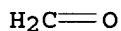
CMF C2 H4 O



CM 4

CRN 50-00-0

CMF C H2 O

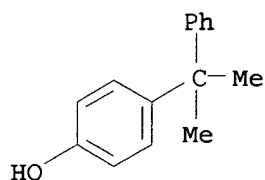


RN 237391-36-5 HCAPLUS

CN Formaldehyde, polymer with 4-(1-methyl-1-phenylethyl)phenol and oxirane, graft (9CI) (CA INDEX NAME)

CM 1

CRN 599-64-4
CMF C15 H16 O



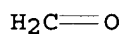
CM 2

CRN 75-21-8
CMF C2 H4 O



CM 3

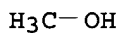
CRN 50-00-0
CMF C H2 O



RN 401620-63-1 HCAPLUS
CN Formaldehyde, polymer with 4-butylphenol and oxirane, methyl ether, graft (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1
CMF C H4 O

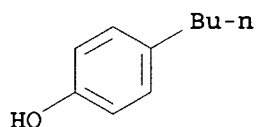


CM 2

CRN 401620-62-0
CMF (C10 H14 O . C2 H4 O . C H2 O)x
CCI PMS

CM 3

CRN 1638-22-8
CMF C10 H14 O



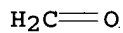
CM 4

CRN 75-21-8
CMF C2 H4 O



CM 5

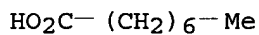
CRN 50-00-0
CMF C H2 O



RN 401620-64-2 HCAPLUS
CN Formaldehyde, polymer with 4-nonylphenol and oxirane, octanoate, graft (9CI) (CA INDEX NAME)

CM 1

CRN 124-07-2
CMF C8 H16 O2

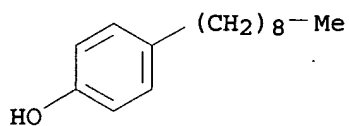


CM 2

CRN 106413-19-8
CMF (C15 H24 O . C2 H4 O . C H2 O)x
CCI PMS

CM 3

CRN 104-40-5
CMF C15 H24 O



CM 4

CRN 75-21-8

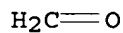
CMF C2 H4 O



CM 5

CRN 50-00-0

CMF C H2 O



IT 9003-56-9, ABS resin
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (polycarbonate alloy; antistatic agent compns. for plastics with long service life)
 RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

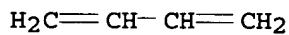
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8

 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$

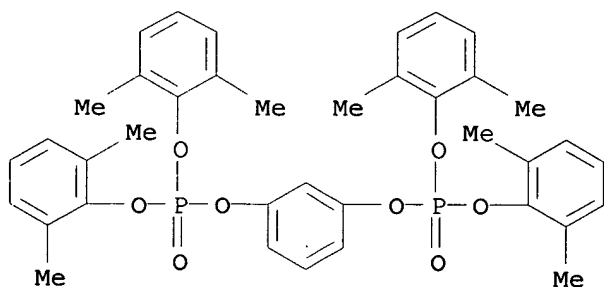
IT 139189-30-3, ADK Stab FP 500

RL: MOA (Modifier or additive use); USES (Uses)

(stabilizer; antistatic agent compns. for plastics with long service life)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



L50 ANSWER 22 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:129291 HCAPLUS

DN 136:185027

TI Thermosetting resin adhesive composition containing phosphorus-based
fireproofing agent for semiconductor device and cover lay
 film, adhesive sheet, and flexible printed circuit board using the
 composition

IN Yamamoto, Tetsuya; Suzuki, Yoshio

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002053833	A2	20020219	JP 2000-238496	

200008
07

PRAI JP 2000-238496 20000807

OS MARPAT 136:185027

AB The halogen-free adhesive compn., showing

storage stability, solder heat resistance, etc., contains 100 parts of an epoxy resin, 20-200 parts of a carboxy-contg. acrylonitrile-butadiene rubber, 0.01-50 parts of a hardener, 10-100 parts inorg. particles having aminosilanes on the surface, and a P-type **fireproofing** agent. The adhesive sheet is that having the adhesive layer sandwiched between release films. The cover lay film is that using the adhesive compn. The flexible printed circuit board has an elec. insulating plastic film and a Cu foil laminated through the adhesive compn. Thus, 40 parts of a MePh dispersion of powd. SiO₂ (Admafine SO25R) treated with 2% 3-aminopropyltriethoxysilane, 50 parts carboxy-contg. nitrile rubber (Nipol 1072), 75 parts P-contg. epoxy resin (FX-279BEK75), 25 parts Br-free epoxy resin (Epikote 834), 5 parts polyester (Vylon 300), 8 parts 3,3'-diaminodiphenyl sulfone, 0.4 part BF₃-monoethylamine complex, and MEK were mixed to give the adhesive compn., which was applied on a polyimide (Kapton 100H) film, dried at 150° for 5 min, and laminated with a release paper to give a cover lay film showing UL-94 **flame** retardance V-0.

- IC ICM C09J163-00
- ICS B32B007-12; B32B015-08; C08G059-40; C09J007-00; C09J007-02;
C09J011-06; C09J113-00; C09K021-12; C09K021-14
- CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 76
- ST thermosetting resin adhesive printed circuit board; phosphorus **fireproofing** agent epoxy resin adhesive; carboxy contg nitrile rubber epoxy resin; aminosilane surface treated inorg powder adhesive; flexible printed circuit board thermosetting adhesive; solder heat resistance adhesive circuit board; storage stability epoxy resin adhesive
- IT Nitrile rubber, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(carboxy-contg., reaction product with epoxy resin and polyester; thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)
- IT Plastic films
(elec. insulating; thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for)
- IT Printed circuit boards
(flexible; thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)
- IT Crosslinking agents
Crosslinking catalysts
(in thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)
- IT Dielectric films
(plastic; thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for)
- IT Polyesters, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(reaction product with carboxy-contg. nitrile rubber and epoxy

- resin; thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)
- IT Epoxy resins, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(reaction product with carboxy-contg. nitrile rubber and polyester; thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)
- IT Semiconductor device fabrication
(thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for)
- IT **Fire-resistant materials**
Fireproofing agents
(thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)
- IT 75-23-0, Boron trifluoride-monoethylamine complex
RL: CAT (Catalyst use); USES (Uses)
(crosslinking accelerator; thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)
- IT 7440-50-8, Copper, miscellaneous
RL: MSC (Miscellaneous)
(foils; thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for)
- IT 919-30-2, 3-Aminopropyltriethoxysilane 3068-76-6, 3-Phenylaminopropyltrimethoxysilane
RL: NUU (Other use, unclassified); USES (Uses)
(inorg. powder surface-treated with; in thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)
- IT **9003-18-3P**
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(nitrile rubber, carboxy-contg., reaction product with epoxy resin and polyester; thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)
- IT 60676-86-0, Admafine SO25R
RL: MOA (Modifier or additive use); USES (Uses)
(powd., aminosilane-treated; in thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)
- IT **399508-04-4P**
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)
- IT **139189-30-3**
RL: MOA (Modifier or additive use); USES (Uses)
(thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)

IT 9003-18-3P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(nitrile rubber, carboxy-contg., reaction product with epoxy resin and polyester; thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)
RN 9003-18-3 HCAPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

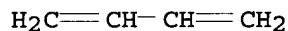
CM 1

CRN 107-13-1
CMF C3 H3 N



CM 2

CRN 106-99-0
CMF C4 H6



IT 399508-04-4P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(thermosetting epoxy resin-based adhesive contg. phosphorus-type **fireproofing** agent for flexible printed circuit board)
RN 399508-04-4 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, polymer with 1,3-butadiene, (chloromethyl)oxirane, decanedioic acid, 2,2-dimethyl-1,3-propanediol, 1,2-ethanediol, FX 279BEK75, 4,4'-(1-methylethylidene)bis[phenol], 2-methyl-2-propenoic acid, 2-propenenitrile and 3,3'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

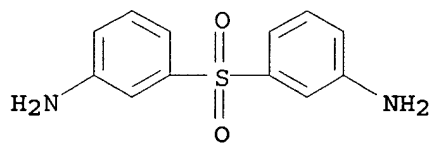
CM 1

CRN 386211-72-9
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

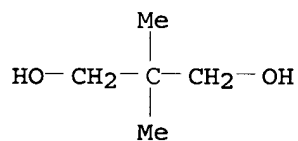
CRN 599-61-1
CMF C12 H12 N2 O2 S



CM 3

CRN 126-30-7

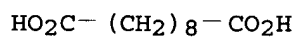
CMF C5 H12 O2



CM 4

CRN 111-20-6

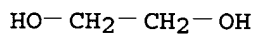
CMF C10 H18 O4



CM 5

CRN 107-21-1

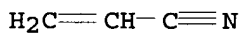
CMF C2 H6 O2



CM 6

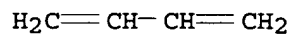
CRN 107-13-1

CMF C3 H3 N



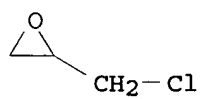
CM 7

CRN 106-99-0
CMF C4 H6



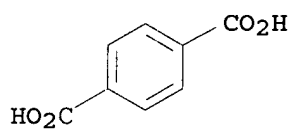
CM 8

CRN 106-89-8
CMF C3 H5 Cl O



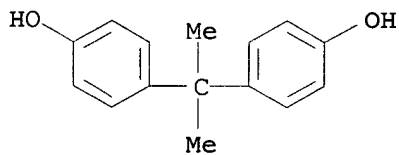
CM 9

CRN 100-21-0
CMF C8 H6 O4



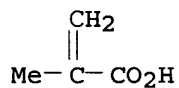
CM 10

CRN 80-05-7
CMF C15 H16 O2



CM 11

CRN 79-41-4
CMF C4 H6 O2

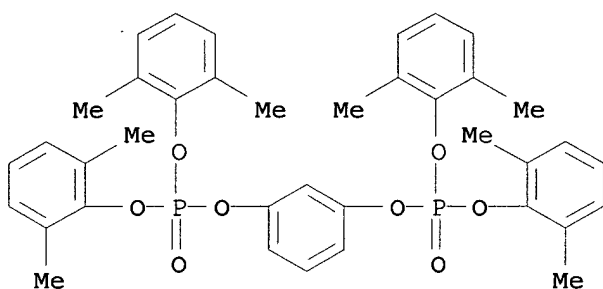


IT 139189-30-3

RL: MOA (Modifier or additive use); USES (Uses)
 (thermosetting epoxy resin-based adhesive contg. phosphorus-type
fireproofing agent for flexible printed circuit board)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



L50 ANSWER 23 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:904365 HCAPLUS

DN 136:38335

TI Flame-retardant resin composition

IN Harashina, Hatsuhiko

PA Polyplastics Co., Ltd., Japan

SO PCT Int. Appl., 90 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001094472	A1	20011213	WO 2001-JP4655	20010601
	W: CN, DE, JP DE 10196299	T	20030508	DE 2001-10196299	20010601
PRAI	JP 2000-166872	A	20000602		
	WO 2001-JP4655	W	20010601		
AB	The flame-retardant resin comprises a base resin, a calcium hydrogen phosphate and ≥1 of the flame retardant from a phosphorus compd., a nitrogen compd., a boron compd., a silicon compd., or a metal compd.. Thus PBT (Duranex) 100, calcium hydrogen phosphate 40, 1,3-phenylene tetrakis(2,6-dimethylphenyl) phosphate (PX 200)				

WO 01/94472

75, antioxidant Irganox 1010 0.3 and stabilizer PEP 36 0.3 parts formed a compn., showing UL 94 V-1.

IC ICM C08L101-00
ICS C08K003-32; C08K005-49; C08K005-34; C08K003-34; C08K003-38; C08K003-20

CC 37-6 (Plastics Manufacture and Processing)

ST calcium hydrogen phosphate flame retardant compn

IT Epoxy resins, uses
RL: POF (Polymer in formulation); USES (Uses)
(arom. epoxy resins; flame-retardant resin compn.)

IT Antioxidants
Fire-resistant materials
Fireproofing agents
Stabilizing agents
(flame-retardant resin compn.)

IT **Phenolic resins**, uses
Polyphosphates
Polysiloxanes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(flame-retardant resin compn.)

IT **Acrylic polymers**, uses
RL: POF (Polymer in formulation); USES (Uses)
(flame-retardant resin compn.)

IT Fluoropolymers, uses
RL: POF (Polymer in formulation); USES (Uses)
(flame-retardant resin compn.)

IT Polyamides, uses
RL: POF (Polymer in formulation); USES (Uses)
(flame-retardant resin compn.)

IT Polycarbonates, uses
RL: POF (Polymer in formulation); USES (Uses)
(flame-retardant resin compn.)

IT Polyolefins
RL: POF (Polymer in formulation); USES (Uses)
(flame-retardant resin compn.)

IT Polyoxymethylenes, uses
RL: POF (Polymer in formulation); USES (Uses)
(flame-retardant resin compn.)

IT Polyoxyphenylenes
RL: POF (Polymer in formulation); USES (Uses)
(flame-retardant resin compn.)

IT Polyamides, properties
Polyesters, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(flame-retardant resin compn.)

IT Phenols, uses
RL: MOA (Modifier or additive use); USES (Uses)
(hindered; flame-retardant resin compn.)

IT Vinyl compounds, uses
RL: POF (Polymer in formulation); USES (Uses)
(polymers; flame-retardant resin compn.)

IT Polyoxymethylenes, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(polyoxyalkylene-; flame-retardant resin compn.)

IT Polyoxyalkylenes, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)

(polyoxymethylene-; flame-retardant resin compn.)

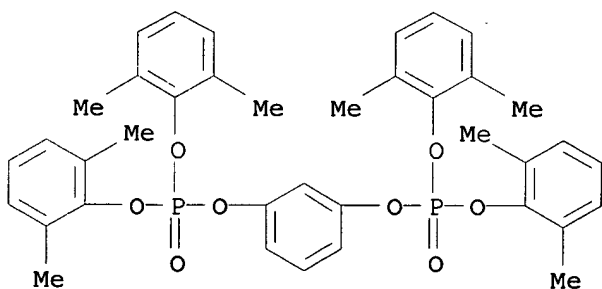
IT 9003-54-7, SAN polymer
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (Cevian JD; flame-retardant resin compn.)

IT 57-13-6, Urea, uses 471-34-1, Calcium carbonate, uses 1309-42-8, Kisuma 5E 5945-33-5, Fyrolflex BDP 6303-21-5D, Phosphinic acid, derivs. 6683-19-8, Irganox 1010 7664-38-2D, Phosphoric acid, esters or ester-amides 7723-14-0, Phosphorus, uses 7757-93-9, Calcium hydrogen phosphate 7758-23-8, Calcium dihydrogen phosphate 7758-87-4, Calcium phosphate 11097-59-9, DHT 4A 12767-90-7, Firebrake ZB 14807-96-6, Talc, uses 15221-07-5, Phosphoric acid, calcium salt (2:1) dihydrate 22535-90-6, CTU-guanamine 34670-63-8, SP 703 37640-57-6, MC 610 57583-54-7, Reofos RDP 80693-00-1, PEP 36 99752-88-2, Sumilit PR 53195 124784-27-6, PX 201 139189-30-3, PX 200 153550-59-5, Sandostab P-EPQ 172827-17-7, Sumilit PR 53647 243144-78-7, PMP 100 304853-27-8, Phenolite KA 7054 380366-74-5, PMP 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame-retardant resin compn.)

IT 9003-53-6, GP-G 200C 24936-68-3, Panlite L1225, properties 24938-67-8, Poly(2,6-dimethyl-1,4-phenylene) oxide 24968-12-5, Duranex 25037-45-0, Bisphenol A-carbonic acid copolymer 25038-59-9, Bellpet EFG 10, properties 25134-01-4, Poly(2,6-dimethyl-1,4-phenylene) oxide 25718-70-1, Adipic acid-1,3-xylylenediamine copolymer 25805-74-7, Reny MXD 6 26062-94-2, PBT monomer-based 30580-17-7, Butylene glycol-isophthalic acid-terephthalic acid copolymer 32131-17-2, Nylon 66, properties 55097-77-3, 1,4-Butanediol-isophthalic acid-terephthalic acid copolymer, SRU 126730-46-9, Duracon M 90-44
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (flame-retardant resin compn.)

IT 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame-retardant resin compn.)

RN 139189-30-3 HCAPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 24 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2001:124280 HCAPLUS

DN 134:179634
 TI **Halogen-free flame-retardant**
 polyester-styrene polymer blend compositions, their manufacture, and
 their moldings with reduced warpage and bleed-out
 IN Harashina, Hatsuhiko; Nakane, Toshio; Yamada, Shinya
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 27 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN. CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2001049096	A2	20010220	JP 2000-166850	200006 02

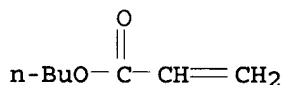
PRAI JP 1999-155706 A 19990602
 AB Title compns., useful for elec. and electronic devices, machinery,
 and automobile parts, contain **flame** retardants comprising
 P compds. and OH- and/or NH2-contg. arom. polymers, arom. nylons,
 polycarbonates, polyarylates, arom. epoxy resins, and/or
 polyphenylene oxides. A molding comprising Duranex [poly(butylene
 terephthalate)] 100, Cevian DP 611 (acrylonitrile-styrene copolymer)
 20, Nova Excel 140 (red P) 8, and Sumilite Resin PR 53195 (novolak
 resin) 13 parts showed V-0 in UL94 burning test.
 IC ICM C08L067-02
 ICS C08J005-00; C08K003-32; C08K005-521; C08K005-5313; C08L025-04;
 C08L101-00
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 37, 76
 ST polyester polystyrene blend **fireproof** phosphorus
 novolak; arom resin **fireproof** polyester polystyrene
 blend; polybutylene terephthalate acrylonitrile styrene copolymer
 blend; molding polyester polystyrene blend **fireproof**
 phosphorus; **halogen free fireproof**
 polyester polystyrene blend; nylon arom polycarbonate polyarylate
 phosphorus **fireproof**; epoxy resin polyoxyphenylene
 phosphorus **fireproof**; automobile elec machinery
fireproof polyester blend
 IT Phenolic resins, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (aminoplast-; polyester-polystyrene blend compns. contg. P and
 arom. resins as **fireproofing** agents)
 IT Epoxy resins, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (arom. epoxy resins; polyester-polystyrene blend compns. contg. P
 and arom. resins as **fireproofing** agents)
 IT Polyamides, uses
 Polyesters, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (arom.; polyester-polystyrene blend compns. contg. P and arom.
 resins as **fireproofing** agents)
 IT Styrene-butadiene rubber, uses
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES

- (Uses)
 (hydrogenated, block, triblock, Kraton G 1657X;
 polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
- IT Phenolic resins, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (novolak; polyester-polystyrene blend compns. contg. P and arom.
 resins as **fireproofing agents**)
- IT Automobiles
 (parts; polyester-polystyrene blend compns. contg. P and arom.
 resins as **fireproofing agents**)
- IT Aminoplasts
 RL: MOA (Modifier or additive use); USES (Uses)
 (phenolic; polyester-polystyrene blend compns. contg. P and arom.
 resins as **fireproofing agents**)
- IT Electric apparatus
Fire-resistant materials
Fireproofing agents
 Machinery
 (polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
- IT Polyesters, uses
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
- IT Molded plastics, uses
 Polymer blends
 RL: DEV (Device component use); PRP (Properties); TEM (Technical or
 engineered material use); USES (Uses)
 (polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
- IT Phenolic resins, uses
 Phosphates, uses
 Poly(arylenealkylenes)
 Polybenzyls
 Polycarbonates, uses
 Polyoxyphenylenes
 Polyphosphates
 RL: MOA (Modifier or additive use); USES (Uses)
 (polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
- IT 26299-47-8, Acrylonitrile-butyl acrylate-styrene copolymer
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (Cevian; polyester-polystyrene blend compns. contg. P and arom.
 resins as **fireproofing agents**)
- IT 9003-53-6, Polystyrene
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (Toyo Styrol GP-G 200C; polyester-polystyrene blend compns.
 contg. P and arom. resins as **fireproofing agents**)
- IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611

- 24968-12-5, Duranex 25038-59-9, Bellpet EF G10,
uses 26062-94-2 30580-17-7, 1,4-Butanediol-
isophthalic acid-terephthalic acid copolymer
RL: DEV (Device component use); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); USES
(Uses)
(polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
- IT 9003-35-4 15541-60-3, Melamine pyrophosphate 24936-68-3,
Panlite L1225, uses 24938-67-8, Poly(2,6-dimethyl-1,4-phenylene
oxide) 24979-70-2, Maruka Lyncur M 25037-45-0 25068-38-6,
Pheno Tohto YP-50 25134-01-4, Poly(2,6-dimethyl-1,4-phenylene
oxide) 25718-70-1 25805-74-7, Reny 6002 26590-50-1,
U-Polymer U 100 26834-02-6, Milex XL 225 35948-25-5,
9,10-Dihydro-9-oxa-10-phosphaphenanthrene-10-oxide 99752-88-2,
Sumilit PR 53195 124784-27-6, PX 201 139189-30-3, PX 200
172827-17-7, Sumilite Resin PR 53647 178965-58-7 243144-78-7,
PMP 100 304853-27-8, Phenolite KA 7054
RL: MOA (Modifier or additive use); USES (Uses)
(polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
- IT 7723-14-0, Phosphorus, uses
RL: MOA (Modifier or additive use); USES (Uses)
(red; polyester-polystyrene blend compns. contg. P and arom.
resins as fireproofing agents)
- IT 106107-54-4 694491-73-1
RL: DEV (Device component use); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); USES
(Uses)
(styrene-butadiene rubber, hydrogenated, block, triblock, Kraton
G 1657X; polyester-polystyrene blend compns. contg. P and arom.
resins as fireproofing agents)
- IT 26299-47-8, Acrylonitrile-butyl acrylate-styrene copolymer
RL: DEV (Device component use); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); USES
(Uses)
(Cevian; polyester-polystyrene blend compns. contg. P and arom.
resins as fireproofing agents)
- RN 26299-47-8 HCAPLUS
CN 2-Propenoic acid, butyl ester, polymer with ethenylbenzene and
2-propenenitrile (9CI) (CA INDEX NAME)

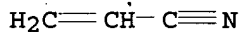
CM 1

CRN 141-32-2
CMF C7 H12 O2



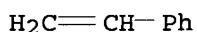
CM 2

CRN 107-13-1
CMF C3 H3 N



CM 3

CRN 100-42-5
CMF C8 H8



IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611
24968-12-5, Duranex 25038-59-9, Bellpet EF G10,
uses 26062-94-2 30580-17-7, 1,4-Butanediol-
isophthalic acid-terephthalic acid copolymer
RL: DEV (Device component use); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); USES
(Uses)
(polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
RN 9003-54-7 HCAPLUS
CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

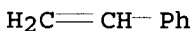
CM 1

CRN 107-13-1
CMF C3 H3 N



CM 2

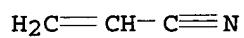
CRN 100-42-5
CMF C8 H8



RN 9003-56-9 HCAPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

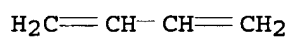
CRN 107-13-1
CMF C3 H3 N



CM 2

CRN 106-99-0

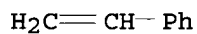
CMF C4 H6



CM 3

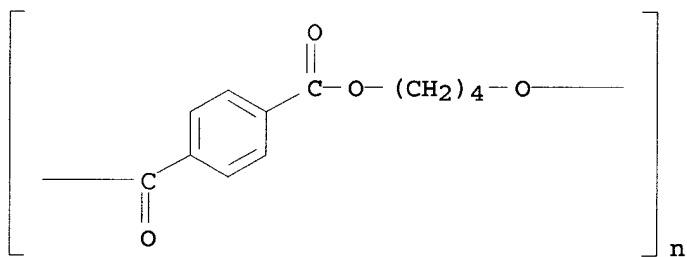
CRN 100-42-5

CMF C8 H8



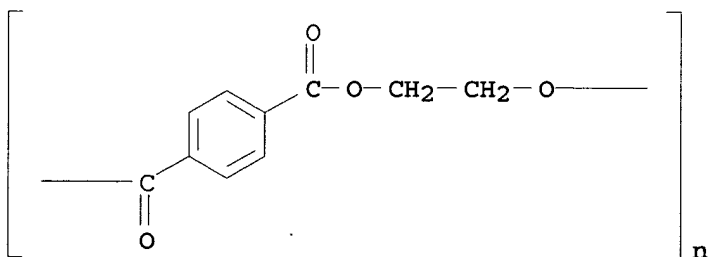
RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 26062-94-2 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA
INDEX NAME)

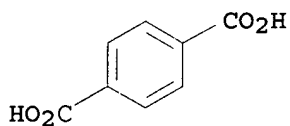
CM 1

CRN 110-63-4
CMF C4 H10 O2

HO—(CH₂)₄—OH

CM 2

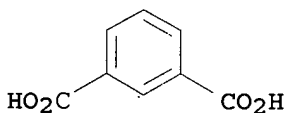
CRN 100-21-0
CMF C8 H6 O4



RN 30580-17-7 HCAPLUS
CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic
acid and 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5
CMF C8 H6 O4



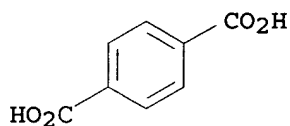
CM 2

CRN 110-63-4
CMF C4 H10 O2

HO—(CH₂)₄—OH

CM 3

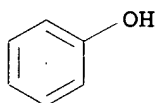
CRN 100-21-0
CMF C8 H6 O4



IT 9003-35-4 26590-50-1, U-Polymer U 100
139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
RN 9003-35-4 HCAPLUS
CN Phenol, polymer with formaldehyde (9CI) (CA INDEX NAME)

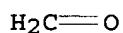
CM 1

CRN 108-95-2
CMF C6 H6 O



CM 2

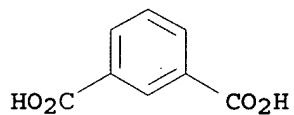
CRN 50-00-0
CMF C H2 O



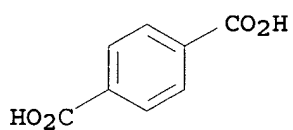
RN 26590-50-1 HCAPLUS
CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic
acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

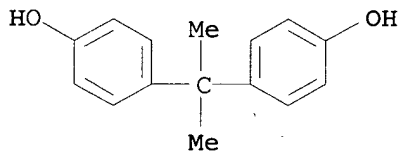
CRN 121-91-5
CMF C8 H6 O4



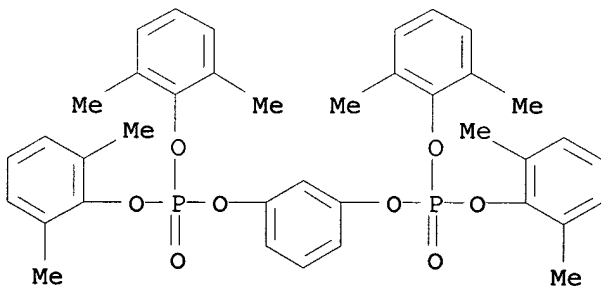
CM 2

CRN 100-21-0
CMF C8 H6 O4

CM 3

CRN 80-05-7
CMF C15 H16 O2

RN 139189-30-3 HCAPLUS
CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



L50 ANSWER 25 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:619527 HCAPLUS
DN 133:208780

TI **Halogen-free fire-resistant resin**
composition

IN Harashina, Hatsuhiko; Nakane, Toshio; Yamada, Shinya

PA Polyplastics Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 29 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2000239543	A2	20000905	JP 1999-364552	199912 22

PRAI JP 1998-367002 A 19981224

AB A **fire-resistant resin compn.** comprising a thermoplastic resin and a **fire retardant** is characterized in that the **fire retardant** is selected from P-contg. compds., polyarylate resins, and arom. epoxy resins. The compn. may also contain a **fireproofing aid**, a N-contg. **fire retardant**, a fluoro resin, a hindered phenolic antioxidant or a P-contg. stabilizer, and a filler. The compn. is useful in producing molding products, such as elec. or electronic parts, mech. parts, and automobile parts. Thus polybutylene terephthalate resin 100, red phosphorus 10, and a polyarylate polymer (U-Polymer U 100) 40 parts were mixed, kneaded, extruded, and injection molded to give a test piece which had V-0 in UL94 burning test.

IC ICM C08L101-16

ICS C08J005-00; C08K003-02; C08K003-32; C08K005-521; C08L063-02;
C08L067-02

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 38

ST polybutylene terephthalate polyarylene blend **fire**
resistant

IT Epoxy resins, properties

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Epikote 1004K; **halogen-free fire**
-resistant resin compn.)

IT Phenoxy resins

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Pheno Tohto YP 50; **halogen-free fire**
-resistant resin compn.)

IT Polyester rubber

Synthetic rubber, properties

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butanediol-polytetramethylene glycol-terephthalic acid, block, block; **halogen-free fire-resistant**
resin compn.)

IT Polyester rubber

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butanediol-polytetramethylene glycol-terephthalic acid, block;

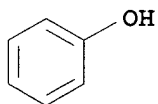
- halogen-free fire-resistant resin compn.)**
- IT Phenolic resins, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(epoxy, novolak; **halogen-free fire** -resistant resin compn.)
- IT **Fire-resistant materials**
Fireproofing agents
(**halogen-free fire-resistant resin compn.**)
- IT Fluoropolymers, uses
Glass fibers, uses
Phenolic resins, uses
Polyamides, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**halogen-free fire-resistant resin compn.**)
- IT Molded plastics, properties
Polyamides, properties
Polycarbonates, properties
Polyesters, properties
Polyoxyphenylenes
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**halogen-free fire-resistant resin compn.**)
- IT Polymer blends
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**halogen-free fire-resistant resin compn.**)
- IT Polybenzyls
RL: MOA (Modifier or additive use); USES (Uses)
(hydroxy-contg.; **halogen-free fire** -resistant resin compn.)
- IT Phenolic resins, uses
RL: MOA (Modifier or additive use); USES (Uses)
(novolak; **halogen-free fire** -resistant resin compn.)
- IT Epoxy resins, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(phenolic, novolak; **halogen-free fire** -resistant resin compn.)
- IT 6683-19-8, Irganox 1010 7723-14-0, Red phosphorus, uses
9002-84-0, Polytetrafluoroethylene 9003-35-4, HPN X
24979-70-2, Maruka Lyncur MS 1P 25718-70-1 25805-74-7, Reny 6002
26834-02-6 26834-02-6D, reaction products with phosphoric acid
37640-57-6, MC 610 80693-00-1 99752-88-2, PR 53195
124784-27-6, PX 201 139189-30-3, PX 200 153550-59-5,
Sandostab P EPQ 178965-58-7 178965-58-7D, .α.,.α.-
Dimethoxy-p-xylene-phenol copolymer, sru, reaction products with
phosphoric acid 184110-94-9, RX 53101 184378-36-7, Terraju C 60
RL: MOA (Modifier or additive use); USES (Uses)
(**halogen-free fire-resistant resin**

- compn.)
- IT 9003-53-6, Polystyrene 24936-68-3, Panlite L 1225, properties
 24938-67-8, Poly(2,6-dimethyl-1,4-phenylene ether)
 24968-12-5, Polybutylene terephthalate 25037-45-0,
 Bisphenol A-carbonic acid copolymer 25038-59-9,
 Polyethylene terephthalate, properties 25068-38-6, Pheno TohTo YP
 50 25134-01-4, 2,6-Xylenol homopolymer 25212-77-5,
 Bisphenol A-isophthalic acid copolymer, sru 26062-94-2,
 Polybutylene terephthalate 26590-50-1, U-Polymer U 100
 30580-17-7, 1,4-Butanediol-isophthalic acid-terephthalic
 acid copolymer 32131-17-2, Nylon 66, properties 32200-90-1
 39281-59-9, Bisphenol A-isophthalic acid-terephthalic acid
 copolymer, sru 55097-77-3, 1,4-Butanediol-isophthalic
 acid-terephthalic acid copolymer, sru 88795-05-5,
 Bisphenol A-diphenyl isophthalate copolymer 91891-20-2
 106677-58-1, ABS resin 111214-86-9, U-Polymer AX 1500
 115252-43-2, U-Polymer U 8400 117313-45-8, Epikote 1004K
 134499-09-5, U-Polymer P 1001
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (halogen-free fire-resistant resin
 compn.)
- IT 52237-98-6, p-Acetoxybenzoic acid-ethylene
 glycol-terephthalic acid copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (liq. crystal; halogen-free fire
 -resistant resin compn.)
- IT 106159-00-6, 1,4-Butanediol-polytetramethylene
 glycol-terephthalic acid block copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (rubber; halogen-free fire
 -resistant resin compn.)
- IT 9003-35-4, HPN X 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (halogen-free fire-resistant resin
 compn.)
- RN 9003-35-4 HCAPLUS
 CN Phenol, polymer with formaldehyde (9CI) (CA INDEX NAME)

CM 1

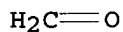
CRN 108-95-2

CMF C6 H6 O

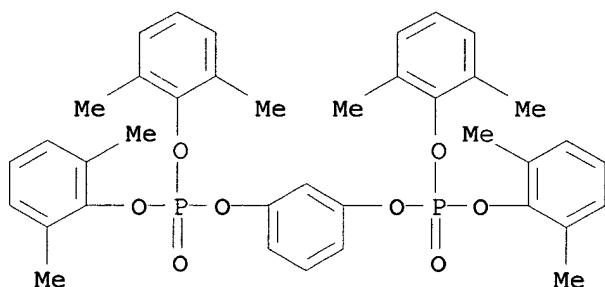


CM 2

CRN 50-00-0
CMF C H2 O

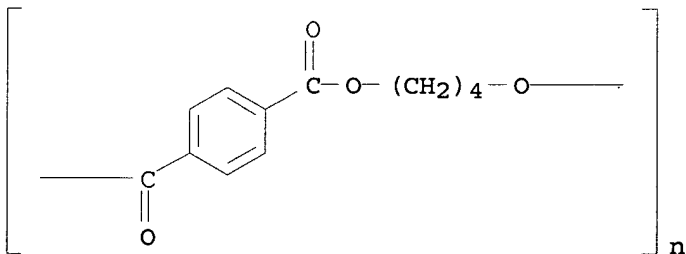


RN 139189-30-3 HCAPLUS
CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)

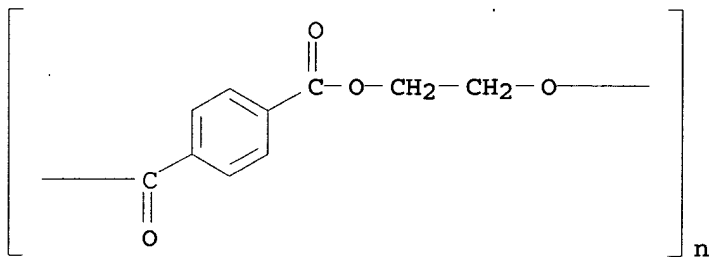


IT 24968-12-5, Polybutylene terephthalate 25038-59-9,
Polyethylene terephthalate, properties 25212-77-5,
Bisphenol A-isophthalic acid copolymer, sru 26062-94-2,
Polybutylene terephthalate 26590-50-1, U-Polymer U 100
30580-17-7, 1,4-Butanediol-isophthalic acid-terephthalic
acid copolymer 32200-90-1 88795-05-5, Bisphenol
A-diphenyl isophthalate copolymer 91891-20-2
106677-58-1, ABS resin
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(halogen-free fire-resistant resin
compn.)

RN 24968-12-5 HCAPLUS
CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)

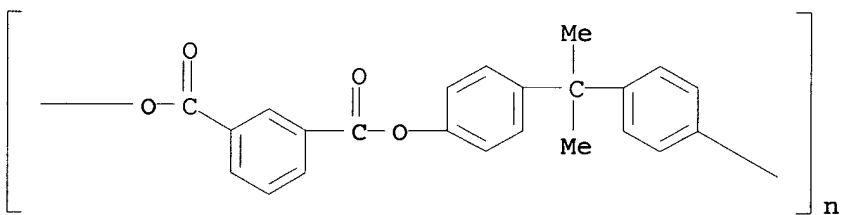


RN 25038-59-9 HCAPLUS
CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)



RN 25212-77-5 HCAPLUS

CN Poly[oxy carbonyl-1,3-phenylenecarbonyloxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



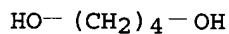
RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

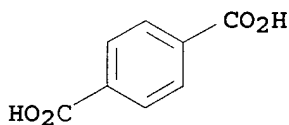
CMF C4 H10 O2



CM 2

CRN 100-21-0

CMF C8 H6 O4



RN 26590-50-1 HCAPLUS

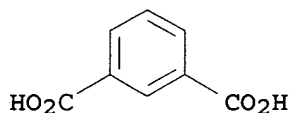
CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic

acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5

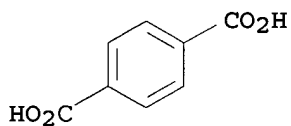
CMF C8 H6 O4



CM 2

CRN 100-21-0

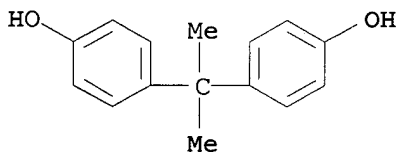
CMF C8 H6 O4



CM 3

CRN 80-05-7

CMF C15 H16 O2



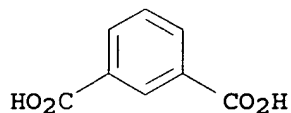
RN 30580-17-7 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

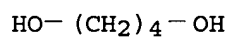
CRN 121-91-5

CMF C8 H6 O4



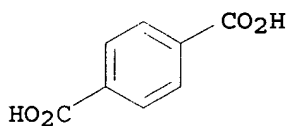
CM 2

CRN 110-63-4
CMF C4 H10 O2

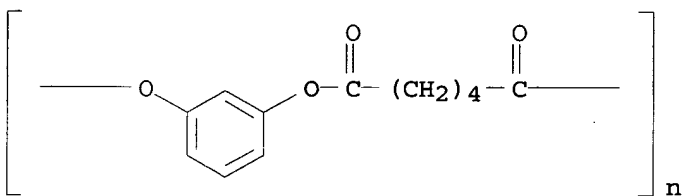


CM 3

CRN 100-21-0
CMF C8 H6 O4



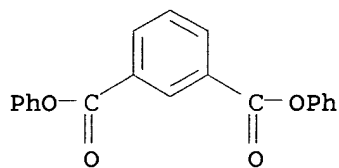
RN 32200-90-1 HCAPLUS
CN Poly[oxy-1,3-phenyleneoxy(1,6-dioxo-1,6-hexanediyl)] (9CI) (CA INDEX NAME)



RN 88795-05-5 HCAPLUS
CN 1,3-Benzenedicarboxylic acid, diphenyl ester, polymer with 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

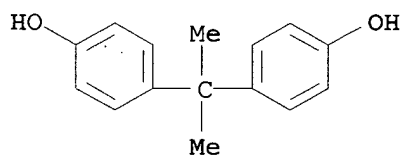
CRN 744-45-6
CMF C20 H14 O4



CM 2

CRN 80-05-7

CMF C15 H16 O2



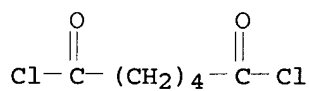
RN 91891-20-2 HCAPLUS

CN Hexanedioyl dichloride, polymer with 1,3-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 111-50-2

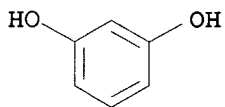
CMF C6 H8 Cl2 O2



CM 2

CRN 108-46-3

CMF C6 H6 O2



RN 106677-58-1 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

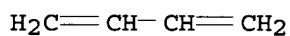
CM 1

CRN 107-13-1
CMF C3 H3 N



CM 2

CRN 106-99-0
CMF C4 H6



CM 3

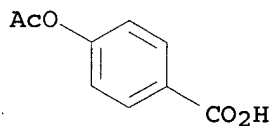
CRN 100-42-5
CMF C8 H8



IT 52237-98-6, p-Acetoxybenzoic acid-ethylene
glycol-terephthalic acid copolymer
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(liq. crystal; **halogen-free fire**
-resistant resin compn.)
RN 52237-98-6 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, polymer with 4-(acetyloxy)benzoic acid
and 1,2-ethanediol (9CI) (CA INDEX NAME)

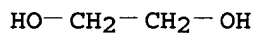
CM 1

CRN 2345-34-8
CMF C9 H8 O4



CM 2

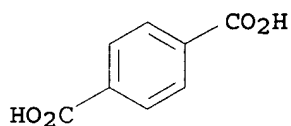
CRN 107-21-1
CMF C2 H6 O2



CM 3

CRN 100-21-0

CMF C8 H6 O4



IT 106159-00-6, 1,4-Butanediol-polytetramethylene glycol-terephthalic acid block copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (rubber; **halogen-free fire**
 -resistant resin compn.)

RN 106159-00-6 HCAPLUS

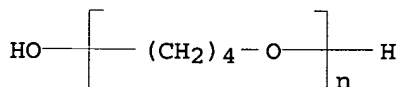
CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol and
 α -hydro- ω -hydroxypoly(oxy-1,4-butanediyl), block (9CI)
 (CA INDEX NAME)

CM 1

CRN 25190-06-1

CMF (C4 H8 O)_n H2 O

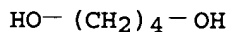
CCI PMS



CM 2

CRN 110-63-4

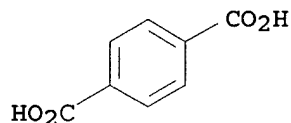
CMF C4 H10 O2



CM 3

CRN 100-21-0

CMF C8 H6 O4



L50 ANSWER 26 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2000:465061 HCAPLUS
 DN 133:90431
 TI Thermoplastic resin compositions and their injection moldings with excellent heat and **fire** resistance, flowability, and antistatic property
 IN Fukumoto, Tadao; Tamura, Shinichi; Yamauchi, Koji
 PA Toray Industries, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000191877	A2	20000711	JP 1998-370111	19981225

PRAI JP 1998-370111 19981225
 AB The comps. comprise (A) polymer blends comprising 70-99% rubber-reinforced styrene polymers and 1-30% polymers having vol. resistivity $\leq 10^{12} \Omega\text{-cm}$ 100, (B) silicone compds. 0.01-5, and (C) $(\text{Ar}10)_k(\text{Ar}20)_m\text{P}(\text{O})[[\text{OXOP}(\text{O})\text{OAr}3]_n\text{OAr}4]_{3-k-m}$ [X = (substituted) p- or m-C₆H₄, p-C₆H₄YC₆H₄-p; Ar1-Ar4 = (halogen-free substituted) Ph; Y = direct bond, O, S, SO₂, CMe₂, CH₂, CHPh; $n \geq 0$; $0 \leq k, m \leq 2$; $0 \leq k + m \leq 2$] 1-20 parts. A test piece comprising butadiene-styrene-acrylonitrile graft copolymer 20, styrene-acrylonitrile copolymer 65, caprolactam-polyethylene glycol-terephthalic acid copolymer 15, PX 20 10, and DY 33-723 (silicone rubber powder) 0.5 part showed Izod impact strength 200 J/m, MFR 9 g/10 min, deflection temp. under load 85°, and surface resistivity $1 \times 10^{10} \Omega$ initially and after 100 days (23°, 50% RH).
 IC ICM C08L051-04
 ICS C08J005-00; C08K005-521; C08L025-04; C08L055-02; C08L051-04; C08L101-12; C08L083-04
 CC 38-3 (Plastics Fabrication and Uses)
 ST thermoplastic molding polystyrene organophosphorus silicone flowability; molding rubber reinforced polystyrene **fire** resistance; polyether ester amide molding antistatic property
 IT Silsesquioxanes
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (DC 4-7105; thermoplastic resin comps. for injection moldings)

- with excellent heat and **fire** resistance, flowability, and antistatic property)
- IT Silicone rubber, uses
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (DY 33-723; thermoplastic resin compns. for injection moldings with excellent heat and **fire** resistance, flowability, and antistatic property)
- IT Polyoxyalkylenes, uses
 Polyoxyalkylenes, uses
 Polyoxyalkylenes, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyamide-polyester-, block; thermoplastic resin compns. for injection moldings with excellent heat and **fire** resistance, flowability, and antistatic property)
- IT Polyesters, uses
 Polyesters, uses
 Polyesters, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyamide-polyoxyalkylene-, block; thermoplastic resin compns. for injection moldings with excellent heat and **fire** resistance, flowability, and antistatic property)
- IT Polyamides, uses
 Polyamides, uses
 Polyamides, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyester-polyoxyalkylene-, block; thermoplastic resin compns. for injection moldings with excellent heat and **fire** resistance, flowability, and antistatic property)
- IT Antistatic agents
Fire-resistant materials
 (thermoplastic resin compns. for injection moldings with excellent heat and **fire** resistance, flowability, and antistatic property)
- IT Molded plastics, uses
 Polymer blends
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastic resin compns. for injection moldings with excellent heat and **fire** resistance, flowability, and antistatic property)
- IT 9003-54-7P, Acrylonitrile-styrene copolymer
 106677-58-1P, Acrylonitrile-butadiene-styrene graft copolymer 113264-08-7P
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (thermoplastic resin compns. for injection moldings with excellent heat and **fire** resistance, flowability, and antistatic property)
- IT 57583-54-7, CR 733S 139189-30-3, PX 200

RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(thermoplastic resin compns. for injection moldings with
excellent heat and fire resistance, flowability, and
antistatic property)

IT 9003-54-7P, Acrylonitrile-styrene copolymer
106677-58-1P, Acrylonitrile-butadiene-styrene graft
copolymer 113264-08-7P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)
(thermoplastic resin compns. for injection moldings with
excellent heat and fire resistance, flowability, and
antistatic property)

RN 9003-54-7 HCAPLUS
CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

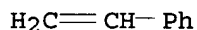
CM 1

CRN 107-13-1
CMF C3 H3 N



CM 2

CRN 100-42-5
CMF C8 H8



RN 106677-58-1 HCAPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene,
graft (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N



CM 2

CRN 106-99-0
CMF C4 H6

1,4-Butanediol-isophthalic acid-terephthalic acid copolymer
 32131-17-2, Polypla 66, uses 55097-77-3, 1,4-Butanediol-
 isophthalic acid-terephthalic acid copolymer, sru
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)

(**flame** retardant thermoplastic resin compns. contg. P
 compds. and OH-contg. polymers for elec., electronic, and
 automotive parts)

IT 107039-67-8, p-Acetoxybenzoic acid-ethylene
 glycol-terephthalic acid block copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)

(liq.-cryst.; **flame** retardant thermoplastic resin
 compns. contg. P compds. and OH-contg. polymers for elec.,
 electronic, and automotive parts)

IT 7723-14-0, Novaexcel 140, uses
 RL: MOA (Modifier or additive use); USES (Uses)

(red, **fireproofing** agent; **flame** retardant
 thermoplastic resin compns. contg. P compds. and OH-contg.
 polymers for elec., electronic, and automotive parts)

IT 106159-00-6, 1,4-Butanediol-polytetramethylene
 glycol-terephthalic acid block copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)

(rubber; **flame** retardant thermoplastic resin compns.
 contg. P compds. and OH-contg. polymers for elec., electronic,
 and automotive parts)

IT 110123-09-6, Maruka Lyncur CHM 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)

(**fireproofing** agent; **flame** retardant
 thermoplastic resin compns. contg. P compds. and OH-contg.
 polymers for elec., electronic, and automotive parts)

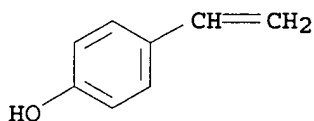
RN 110123-09-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with
 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 2628-17-3

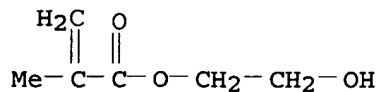
CMF C8 H8 O



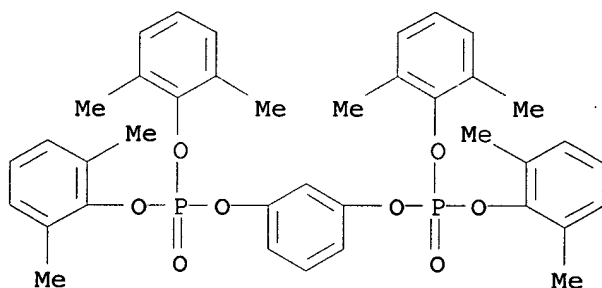
CM 2

CRN 868-77-9

CMF C6 H10 O3



RN 139189-30-3 HCAPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



IT 9003-56-9, ABS 24968-12-5, Duranex
 25038-59-9, Bellpet EFG 10, uses 26062-94-2,
 1,4-Butanediol-terephthalic acid copolymer 30580-17-7,
 1,4-Butanediol-isophthalic acid-terephthalic acid copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (flame retardant thermoplastic resin compns. contg. P
 compds. and OH-contg. polymers for elec., electronic, and
 automotive parts)
 RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

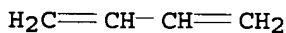
CMF C3 H3 N



CM 2

CRN 106-99-0

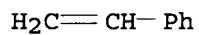
CMF C4 H6



CM 3

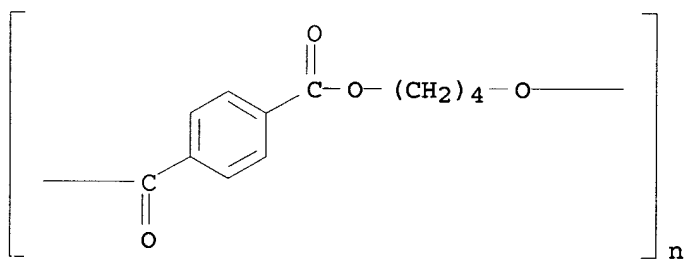
CRN 100-42-5

CMF C8 H8



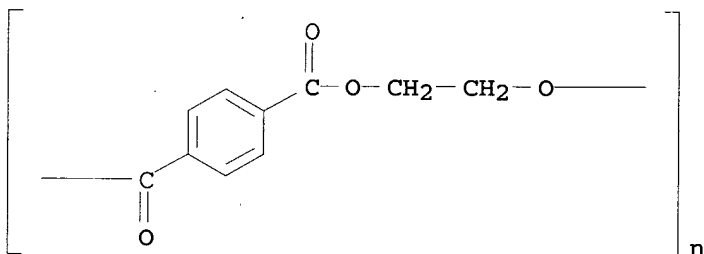
RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)



RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)



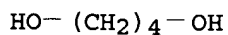
RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA
INDEX NAME)

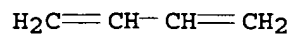
CM 1

CRN 110-63-4

CMF C4 H10 O2



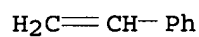
CM 2



CM 3

CRN 100-42-5

CMF C8 H8



RN 113264-08-7 HCAPLUS

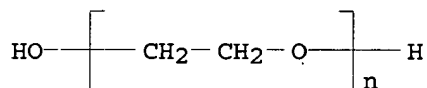
CN 1,4-Benzenedicarboxylic acid, polymer with hexahydro-2H-azepin-2-one
and α -hydro- ω -hydroxypoly(oxy-1,2-ethanediyl), block
(9CI) (CA INDEX NAME)

CM 1

CRN 25322-68-3

CMF (C2 H4 O)_n H2 O

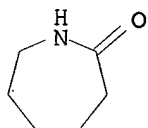
CCI PMS



CM 2

CRN 105-60-2

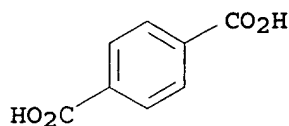
CMF C6 H11 N O



CM 3

CRN 100-21-0

CMF C8 H6 O4

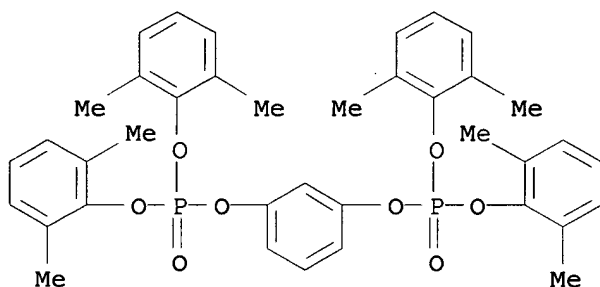


IT 139189-30-3, PX 200

RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(thermoplastic resin compns. for injection moldings with
excellent heat and fire resistance, flowability, and
antistatic property)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



L50 ANSWER 27 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:454395 HCAPLUS

DN 133:75073

TI **Halogen-free flame** retardant

thermoplastic resin compositions containing phosphorus compounds,
their manufacture, and molded products therefrom

IN Harashina, Hatsuhiko; Nakane, Toshio; Yamada, Shinya

PA Polyplastics Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 20 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN. CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000186220	A2	20000704	JP 1999-290103	19991012

PRAI JP 1998-290947 A 19981013

AB The compns., useful for elec., electronic, and automotive parts,
contain thermoplastic resins and **fireproofing** agents
contg. P compds. and polymers with OH-contg. arom. side chains.
Thus, a 100:6.6:11 Duranex (PBT)-Novaexcel 140 (red P)-Maruka Lyncur
MS 1P (p-vinylphenol polymer) mixt. was molded into a test piece

showing **fire** resistance (UL 94) V-0 and no bleed out after 24 h at 240°.

IC ICM C08L101-16
ICS C08K003-32; C08K005-521; C08L025-18; C09K015-20; C09K021-04; C09K021-12; C09K021-14

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37

ST **fire** resistance thermoplastic resin elec part; PBT polyvinylphenol red phosphorus fluoropolymer blend; bleeding resistance polycarbonate automotive part

IT Polyester rubber
Synthetic rubber, uses
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butanediol-polytetramethylene glycol-terephthalic acid, block, block; **flame** retardant thermoplastic resin compns. contg. P compds. and OH-contg. polymers for elec., electronic, and automotive parts)

IT Polyester rubber
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butanediol-polytetramethylene glycol-terephthalic acid, block; **flame** retardant thermoplastic resin compns. contg. P compds. and OH-contg. polymers for elec., electronic, and automotive parts)

IT Electric apparatus
Fire-resistant materials
Fireproofing agents
Machinery parts
(**flame** retardant thermoplastic resin compns. contg. P compds. and OH-contg. polymers for elec., electronic, and automotive parts)

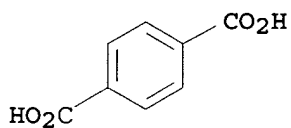
IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**flame** retardant thermoplastic resin compns. contg. P compds. and OH-contg. polymers for elec., electronic, and automotive parts)

IT Glass fibers, uses
Polyamides, uses
Polyesters, uses
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**flame** retardant thermoplastic resin compns. contg. P compds. and OH-contg. polymers for elec., electronic, and automotive parts)

IT Acrylic polymers, uses
Polyolefins
Polyoxyphenylenes
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**flame** retardant thermoplastic resin compns. contg. P compds. and OH-contg. polymers for elec., electronic, and automotive parts)

IT Polymer blends
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

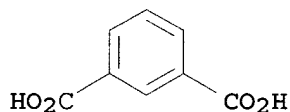
CRN 100-21-0
CMF C8 H6 O4



RN 30580-17-7 HCAPLUS
CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 1,4-butanediol (9CI) (CA INDEX NAME)

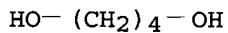
CM 1

CRN 121-91-5
CMF C8 H6 O4



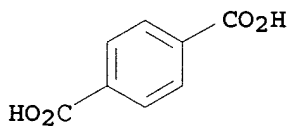
CM 2

CRN 110-63-4
CMF C4 H10 O2



CM 3

CRN 100-21-0
CMF C8 H6 O4



IT 107039-67-8, p-Acetoxybenzoic acid-ethylene glycol-terephthalic acid block copolymer
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(liq.-cryst.; **flame** retardant thermoplastic resin
compns. contg. P compds. and OH-contg. polymers for elec.,
electronic, and automotive parts)

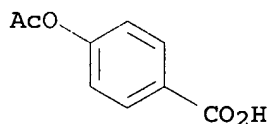
RN 107039-67-8 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 4-(acetyloxy)benzoic acid
and 1,2-ethanediol, block (9CI) (CA INDEX NAME)

CM 1

CRN 2345-34-8

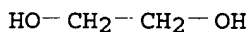
CMF C9 H8 O4



CM 2

CRN 107-21-1

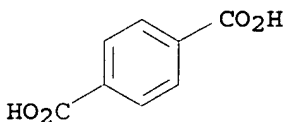
CMF C2 H6 O2



CM 3

CRN 100-21-0

CMF C8 H6 O4



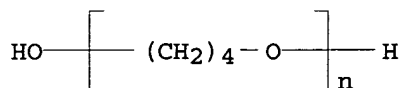
IT 106159-00-6, 1,4-Butanediol-polytetramethylene
glycol-terephthalic acid block copolymer
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(rubber; **flame** retardant thermoplastic resin compns.
contg. P compds. and OH-contg. polymers for elec., electronic,
and automotive parts)

RN 106159-00-6 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol and
 α -hydro- ω -hydroxypoly(oxy-1,4-butanediyl), block (9CI)
(CA INDEX NAME)

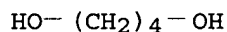
CM 1

CRN 25190-06-1
 CMF (C4 H8 O)_n H2 O
 CCI PMS



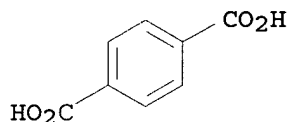
CM 2

CRN 110-63-4
 CMF C4 H10 O2



CM 3

CRN 100-21-0
 CMF C8 H6 O4



L50 ANSWER 28 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:389039 HCAPLUS

DN 133:18548

TI **Halogen-free fire-**, heat-, and
 moisture-resistant thermoplastic resin compositions containing
 phosphonate salts, and moldings and cable jackets thereof

IN Yamauchi, Koji; Matsumoto, Hideki; Kamata, Akinori

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

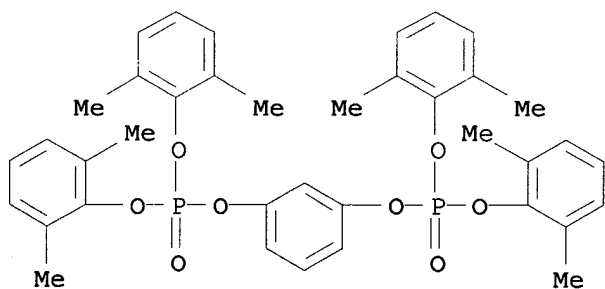
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2000160036	A2	20000613	JP 1999-264536	199909 17

PRAI JP 1998-269900 A 19980924
OS MARPAT 133:18548
AB The compns., also useful for elec. connectors, switches, etc., contain 100 parts thermoplastic resins and 1-100 parts ammonium or substituted 1,3,5-triazine salts of HOCR1(PO3H2)2 or N(CR22PO3H2)3 ($\text{R1, R2} = \text{H, alkyl, aralkyl, cycloalkyl}$). The compns. also show good thermal stability during processing. An injection molding comprising 100 parts 1100S [poly(butylene terephthalate)] and 20 parts ammonium hydroxyethanediphosphonate showed UL94 flammability rating V-2 and good **fire** and moisture resistance.
IC ICM C08L101-02
ICS C08K005-5317; H01B003-30; H01B003-42; H01B003-44
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37, 76
ST thermoplastic resin ammonium triazine phosphonate **fireproof**; polybutylene terephthalate ammonium hydroxyethanediphosphonate **fireproof**; cable jacket elec part phosphonate **fireproof**; **halogen free** phosphonate **fireproof** thermoplastic resin; molding thermoplastic resin heat moisture resistance; thermal stability thermoplastic resin phosphonate **fireproof**
IT Tools
(bobbins, coiled; heat- and moisture-resistant thermoplastic resin compns. contg. phosphonate salts as **fireproofing** agents for cable jackets and elec. parts)
IT Electric contacts
(connectors; heat- and moisture-resistant thermoplastic resin compns. contg. phosphonate salts as **fireproofing** agents for cable jackets and elec. parts)
IT Electric cables
Electric insulators
Electric switches
Fire-resistant materials
Fireproofing agents
Relays
Water-resistant materials
(heat- and moisture-resistant thermoplastic resin compns. contg. phosphonate salts as **fireproofing** agents for cable jackets and elec. parts)
IT Phenolic resins, uses
Phenoxy resins
Polyamides, uses
Polycarbonates, uses
Polyesters, uses
Polythiophenylenes
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(heat- and moisture-resistant thermoplastic resin compns. contg. phosphonate salts as **fireproofing** agents for cable jackets and elec. parts)
IT Molded plastics, uses
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(heat- and moisture-resistant thermoplastic resin compns. contg. phosphonate salts as **fireproofing** agents for cable

- jackets and elec. parts)
- IT Automobiles
(parts; heat- and moisture-resistant thermoplastic resin compns. contg. phosphonate salts as **fireproofing** agents for cable jackets and elec. parts)
- IT Plastics, uses
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(thermoplastics; heat- and moisture-resistant thermoplastic resin compns. contg. phosphonate salts as **fireproofing** agents for cable jackets and elec. parts)
- IT 7101-46-4P 139189-30-3P, PX 200 259659-19-3P
259826-33-0P 808740-84-3P, MC 440
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); PREP (Preparation); USES (Uses)
(**fireproofing** agent; heat- and moisture-resistant thermoplastic resin compns. contg. phosphonate salts as **fireproofing** agents for cable jackets and elec. parts)
- IT 9003-56-9, Toyolac T 100 24936-68-3, Iupilon S3000, uses 24968-12-5, 1100S 25037-45-0 26061-90-5, Bondfast E 26062-94-2
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(heat- and moisture-resistant thermoplastic resin compns. contg. phosphonate salts as **fireproofing** agents for cable jackets and elec. parts)
- IT 139189-30-3P, PX 200
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); PREP (Preparation); USES (Uses)
(**fireproofing** agent; heat- and moisture-resistant thermoplastic resin compns. contg. phosphonate salts as **fireproofing** agents for cable jackets and elec. parts)
- RN 139189-30-3 HCAPLUS
- CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



- IT 9003-56-9, Toyolac T 100 24968-12-5, 1100S 26061-90-5, Bondfast E 26062-94-2
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(heat- and moisture-resistant thermoplastic resin compns. contg.
phosphonate salts as **fireproofing** agents for cable
jackets and elec. parts)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

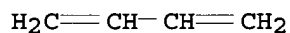
CMF C3 H3 N



CM 2

CRN 106-99-0

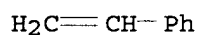
CMF C4 H6



CM 3

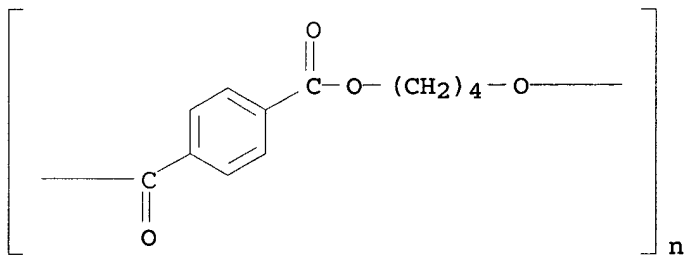
CRN 100-42-5

CMF C8 H8



RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)



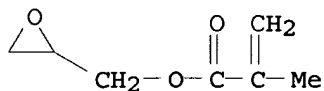
RN 26061-90-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with
ethene (9CI) (CA INDEX NAME)

CM 1

CRN 106-91-2

CMF C7 H10 O3



CM 2

CRN 74-85-1

CMF C2 H4



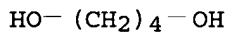
RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

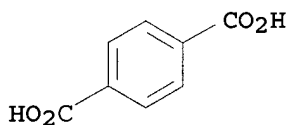
CMF C4 H10 O2



CM 2

CRN 100-21-0

CMF C8 H6 O4



L50 ANSWER 29 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:317044 HCAPLUS

DN 132:322838

TI **Flame** retardant poly(butylene terephthalate) compositions containing phosphate esters and molded products therefrom

IN Yamauchi, Koji; Matsumoto, Hideki; Kanomata, Akinori

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

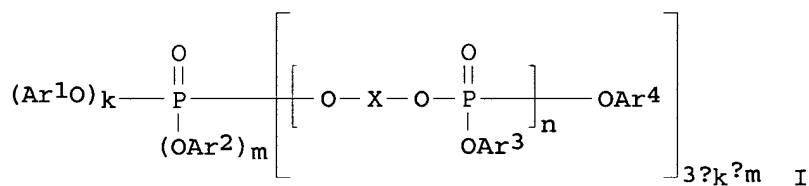
DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000136297	A2	20000516	JP 1999-227574	19990811
PRAI	JP 1998-237163	A	19980824		

GI



AB The compns., useful for machine, elec., electronic, and automotive parts, contain PBT 100, polycarbonates 0.1-100, red P with elec. cond. 0.1-1000 μS (measured by mixing 5 g red P with 100 mL H_2O , extg. at 121° for 100 h, and dilg. filtrated solns. with 250 mL H_2O) 0.01-30, and I [X = R1-4-substituted p-phenylene, R5-8-substituted m-phenylene, p-C₆H₄-p-C₆H₄; R1-8 = H, C1-5 alkyl; Ar1-4 = (halogen-free substituted) arom. group; Y = direct bond, O, S, SO₂, CMe₂, CH₂, CHPh; n \geq 0; k, m = 0-2; k + m = 0-2]. Thus, a test piece contg. 1100S (PBT) 95, Iupilon S 3000 (polycarbonate) 15, a 1:1 1100S-Novaexcel 140 (red P) mixt. 10, PX 200 (phosphate ester) 5, and glass fiber 55 parts showed UL-94 rating V-0, good impact and tracking resistance, and good recyclability.

IC ICM C08L067-02

ICS C08J003-20; C08K003-02; C08K005-3492; C08K005-523; C08K007-14; C08K009-04; H01F041-12; H01H009-02; H01R013-46; C08L067-02; C08L069-00; C08L027-12; C08L023-00

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37

ST **fire** resistance PBT polycarbonate phosphate ester; red phosphorus PBT automotive part recyclability; impact resistance PBT polycarbonate connector

IT Silsesquioxanes

RL: MOA (Modifier or additive use); USES (Uses)

(DC 4-7105; **flame** retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability)

IT Impact-resistant materials

(**fire**-resistant; **flame** retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability)

IT Electric apparatus
 Fireproofing agents
 Machinery parts
 Recycling of plastics and rubbers
 (flame retardant PBT compns. contg. red P and phosphate
 esters for machine and automotive parts with good recyclability)

IT Polycarbonates, uses
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (flame retardant PBT compns. contg. red P and phosphate
 esters for machine and automotive parts with good recyclability)

IT Polymer blends
 RL: DEV (Device component use); PRP (Properties); TEM (Technical or
 engineered material use); USES (Uses)
 (flame retardant PBT compns. contg. red P and phosphate
 esters for machine and automotive parts with good recyclability)

IT Fluoropolymers, uses
 Polyolefins
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardant PBT compns. contg. red P and phosphate
 esters for machine and automotive parts with good recyclability)

IT **Fire-resistant materials**
 (impact-resistant; flame retardant PBT compns. contg.
 red P and phosphate esters for machine and automotive parts with
 good recyclability)

IT Automobiles
 (parts; flame retardant PBT compns. contg. red P and
 phosphate esters for machine and automotive parts with good
 recyclability)

IT 24936-68-3, Iupilon S 3000, uses 24968-12-5, 1100S
 25037-45-0, Bisphenol A-carbonic acid copolymer 26062-94-2
 , 1,4-Butanediol-terephthalic acid copolymer
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (flame retardant PBT compns. contg. red P and phosphate
 esters for machine and automotive parts with good recyclability)

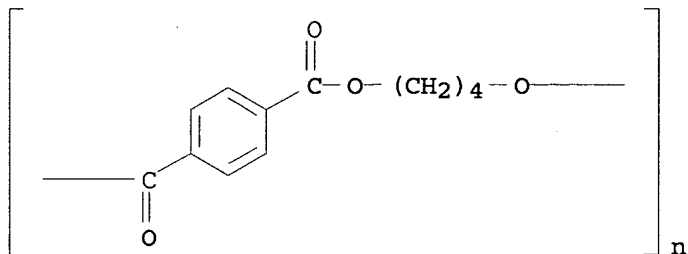
IT 9002-84-0, Teflon 6J 26061-90-5, Bondfast E
 139189-30-3, PX 200 808740-84-3, MC 440
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardant PBT compns. contg. red P and phosphate
 esters for machine and automotive parts with good recyclability)

IT 7723-14-0, Novaexcel 140, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (red; flame retardant PBT compns. contg. red P and
 phosphate esters for machine and automotive parts with good
 recyclability)

IT 24968-12-5, 1100S 26062-94-2, 1,4-Butanediol-
 terephthalic acid copolymer
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (flame retardant PBT compns. contg. red P and phosphate
 esters for machine and automotive parts with good recyclability)

RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



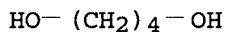
RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

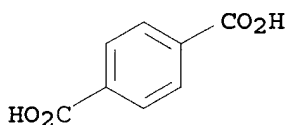
CMF C4 H10 O2



CM 2

CRN 100-21-0

CMF C8 H6 O4



IT 26061-90-5, Bondfast E 139189-30-3, PX 200

RL: MOA (Modifier or additive use); USES (Uses)

(flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability)

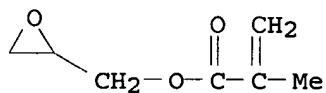
RN 26061-90-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 106-91-2

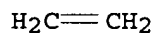
CMF C7 H10 O3



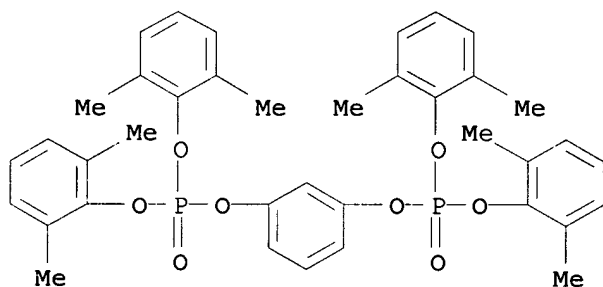
CM 2

CRN 74-85-1

CMF C2 H4



RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)

L50 ANSWER 30 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1999:751647 HCAPLUS

DN 131:337896

TI Fire-resistant polyester compositions

IN Fujita, Katsutoyo; Iba, Satoaki

PA Kanegafuchi Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

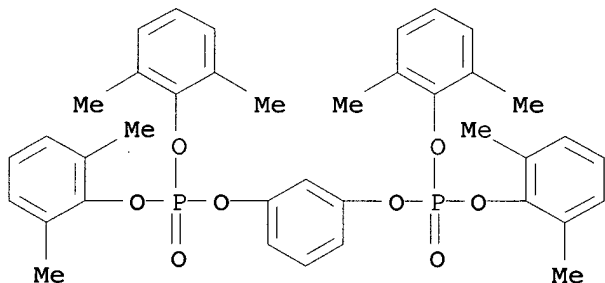
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11323105	A2	19991126	JP 1998-136830	19980519
PRAI	JP 1998-136830		19980519		
OS	MARPAT 131:337896				
AB	The compns. contain (A) thermoplastic polyesters 30-70, (B) org. P-contg. fireproofing agents 5-20, (C) coated, stabilized red phosphorus-contg. fireproofing agents 0-5, (D) melamine-cyanuric acid addn. compds. 4-20, (E) copolymers with MI at 190° and				

2-kg load (JIS K 6370) 2-500 g/10 min and composed of ethylene 30-90, Cl-10 alkyl (meth)acrylates 10-50, CO 0-40, and other copolymerizable vinyl monomers 0-10% 0.5-15, and (F) glass fibers 5-50 parts, wherein a total of A to F is 100 parts. The compns. have good mech. strength, hardness of weld parts, flame retardance, moisture and heat resistance, fluidity, tracking resistance, and extrusion moldability. Thus, poly(ethylene terephthalate) with logarithmic viscosity (1/1 PhOH/C₂H₂Cl₄, 25°) 0.65 dL/g 60.0, bisphenol A bis(dicresyl) phosphate (CR 747) 6.0, a **phenolic resin-coated red P** (Novaexcel 140) 3.0, melamine cyanurate (MC 440) 10.0, 65:35 ethylene-Et **acrylate copolymer** (Evaflex EEA-A 709) 10.0, Epikote 828 0.5, and ADK Stab AO 60 0.5% were dry-blended, kneaded at 270-280° with 10.0% a glass fiber (T 195H/P) to give a compn. It was injection-molded to give test pieces with UL-94 flame retardance of 1.6-mm thick bar V-0, resp., tensile strength 91 MPa, weld hardness 70 MPa and its retention 76.9% after 24 h at 121° and 100% RH, heat distortion temp. 201°, fluidity (0.01 mL/s) 35, and tracking resistance 325 V.

- IC ICM C08L067-02
ICS C08K005-3477; C08K005-49; C08K007-14; C08K009-00; C08L067-02; C08L073-00; C08L033-08; C08L065-00
- CC 37-6 (Plastics Manufacture and Processing)
- ST thermoplastic **polyester** phosphorus fireproofing agent; melamine cyanurate thermoplastic **polyester** flame retardant compn; ethylene alkyl **acrylate copolymer polyester** compn; glass fiber reinforced thermoplastic **polyester**; polyethylene terephthalate phosphorus fireproofing agent
- IT Glass fibers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(T 195H/P; flame-retardant, glass fiber-reinforced thermoplastic **polyester** compns. free of Br, Cl, As)
- IT Fireproofing agents
(coated stabilized red P-org. P compd. mixts.; flame-retardant, glass fiber-reinforced thermoplastic **polyester** compns. free of Br, Cl, As)
- IT **Polyesters**, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(flame-retardant, glass fiber-reinforced thermoplastic **polyester** compns. free of Br, Cl, As)
- IT **Polyesters**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(flame-retardant, glass fiber-reinforced thermoplastic **polyester** compns. free of Br, Cl, As free of Br, Cl, As)
- IT Reinforced plastics
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(glass fiber-reinforced; flame-retardant, glass fiber-reinforced thermoplastic **polyester** compns. free of Br, Cl, As)
- IT 9010-86-0, Evaflex EEA-A 704
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(Evaflex EEA-A 709; flame-retardant, glass fiber-reinforced thermoplastic **polyester** compns. free of Br, Cl, As)
- IT 101-02-0, TPP 93981-32-9, CR 747 124784-27-6, PX 201

139189-30-3, PX 200 808740-84-3, MC 440
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame-retardant, glass fiber-reinforced thermoplastic
polyester compns. free of Br, Cl, As)
 IT 24968-12-5, Poly(butylene terephthalate) 26062-94-2, Poly(butylene
 terephthalate)
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (flame-retardant, glass fiber-reinforced thermoplastic
polyester compns. free of Br, Cl, As)
 IT 25038-59-9, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (flame-retardant, glass fiber-reinforced thermoplastic
polyester compns. free of Br, Cl, As free of Br, Cl, As)
 IT 7723-14-0, Novaexcel 140, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (red; flame-retardant, glass fiber-reinforced thermoplastic
polyester compns. free of Br, Cl, As)
 IT 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame-retardant, glass fiber-reinforced thermoplastic
polyester compns. free of Br, Cl, As)
 RN 139189-30-3 HCAPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



L50 ANSWER 31 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1999:698161 HCAPLUS
 DN 131:323389
 TI **Halogen-free** vinyl ester resin compositions with
 excellent **fire** resistance and their cured products
 IN Okumura, Hiroya; Uchida, Toshiaki; Inoue, Tomoko; Takeuchi, Hiroshi;
 Fujii, Tatsuo; Shiraki, Hiroyuki
 PA Takeda Chemical Industries, Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 11302344 A2 19991102 JP 1998-124088 19980417

PRAI JP 1998-124088 19980417

AB The compns. useful for prepregs and laminates comprise urethane-modified vinyl ester resins (A) or A-polybasic acid anhydride adducts, double bond-contg. monomers, and P-type **flame** retardants, where A is prepd. by reaction of epoxy resins bearing ≥ 1.2 epoxy group with unsatd. monobasic acid and/or by reaction of OH-contg. (meth)acrylates with polyisocyanates bearing ≥ 1.5 NCO group at equiv. ratio of NCO/OH 0.01-1.2. Thus, 100 parts of a reaction product of epoxy resin (YD 128) 748, methacrylic acid 344, 2-hydroxyethyl methacrylate 390, TDI 174, HDI trimer 504, and styrene 840 g was mixed with 30 parts tricresyl phosphate and 130 parts Al(OH)₃ (CWL 310) and cured to give a test piece showing good fire resistance.

IC ICM C08F290-06
ICS C08G018-67; C08K003-32; C08K005-521; C08L075-16; C08G059-17; C08J005-10; C08J005-24

CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 38

ST **flame** retardant urethane vinyl ester prepreg; epoxy hydroxymethacrylate polyisocyanate copolymer cresyl phosphate; **halogen free** vinyl ester resin laminate

IT Epoxy resins, preparation
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acrylates, urethane-modified; **halogen-free** urethane-modified vinyl ester resin compns. with good **fire** resistance)

IT Fillers
(aluminum hydroxide; **halogen-free** urethane-modified vinyl ester resin compns. with good **fire** resistance)

IT Polyphosphoric acids
RL: MOA (Modifier or additive use); USES (Uses)
(ammonium salts, AP 422, **flame** retardant; **halogen-free** urethane-modified vinyl ester resin compns. with good **fire** resistance)

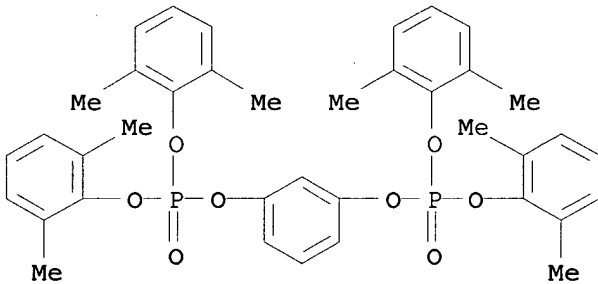
IT **Fire-resistant** materials
Laminated materials
(**halogen-free** urethane-modified vinyl ester resin compns. with good **fire** resistance)

IT Rubber, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**halogen-free** urethane-modified vinyl ester resin compns. with good **fire** resistance)

IT **Fireproofing** agents
(phosphorus-type; **halogen-free** urethane-modified vinyl ester resin compns. with good **fire** resistance)

IT 21645-51-2, Aluminum hydroxide, uses
RL: MOA (Modifier or additive use); USES (Uses)
(CWL 310, filler; **halogen-free**

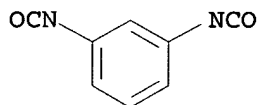
- urethane-modified vinyl ester resin compns. with good
fire resistance)
- IT 1330-78-5, Tricresyl phosphate 139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(**flame retardant; halogen-free**
urethane-modified vinyl ester resin compns. with good
fire resistance)
- IT 248255-46-1P, HDI trimer-2-hydroxyethyl methacrylate-styrene-
TDI-YD 128 methacrylate copolymer 248255-47-2P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)
(**halogen-free** urethane-modified vinyl ester
resin compns. with good **fire resistance**)
- IT 139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(**flame retardant; halogen-free**
urethane-modified vinyl ester resin compns. with good
fire resistance)
- RN 139189-30-3 HCAPLUS
- CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



- IT 248255-46-1P, HDI trimer-2-hydroxyethyl methacrylate-styrene-
TDI-YD 128 methacrylate copolymer 248255-47-2P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)
(**halogen-free** urethane-modified vinyl ester
resin compns. with good **fire resistance**)
- RN 248255-46-1 HCAPLUS
- CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with
(chloromethyl)oxirane polymer with 4,4'-(1-
methylethylidene)bis[phenol] 2-methyl-2-propenoate,
1,6-diisocyanatohexane trimer, 1,3-diisocyanatomethylbenzene and
ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 26471-62-5
CMF C9 H6 N2 O2
CCI IDS

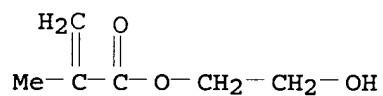


D1-Me

CM 2

CRN 868-77-9

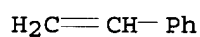
CMF C6 H10 O3



CM 3

CRN 100-42-5

CMF C8 H8



CM 4

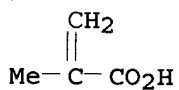
CRN 61970-25-0

CMF (C15 H16 O2 . C3 H5 Cl O)x . x C4 H6 O2

CM 5

CRN 79-41-4

CMF C4 H6 O2



CM 6

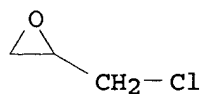
CRN 25068-38-6

CMF (C15 H16 O2 . C3 H5 Cl O)x

CCI PMS

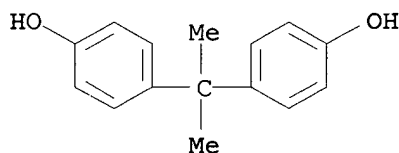
CM 7

CRN 106-89-8
 CMF C3 H5 Cl O



CM 8

CRN 80-05-7
 CMF C15 H16 O2

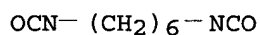


CM 9

CRN 28574-90-5
 CMF (C8 H12 N2 O2)3
 CCI PMS

CM 10

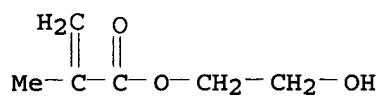
CRN 822-06-0
 CMF C8 H12 N2 O2



RN 248255-47-2 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with (chloromethyl)oxirane polymer with 4,4'-(1-methylethylidene)bis[phenol] 2-propenoate, 1,3-diisocyanatomethylbenzene trimer, ethenylbenzene, 1,1'-methylenebis[4-isocyanatobenzene] and 3a,4,7,7a-tetrahydro-1,3-isobenzofurandione (9CI) (CA INDEX NAME)

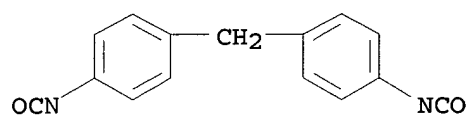
CM 1

CRN 868-77-9
 CMF C6 H10 O3



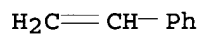
CM 2

CRN 101-68-8
CMF C15 H10 N2 O2



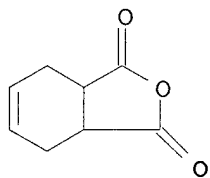
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

CRN 85-43-8
CMF C8 H8 O3

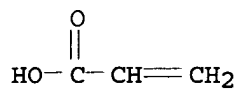


CM 5

CRN 55818-57-0
CMF (C15 H16 O2 . C3 H5 Cl O)x . x C3 H4 O2

CM 6

CRN 79-10-7
CMF C3 H4 O2



CM 7

CRN 25068-38-6

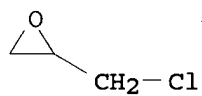
CMF (C15 H16 O2 . C3 H5 Cl O)x

CCI PMS

CM 8

CRN 106-89-8

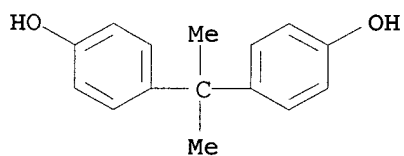
CMF C3 H5 Cl O



CM 9

CRN 80-05-7

CMF C15 H16 O2



CM 10

CRN 9019-85-6

CMF (C9 H6 N2 O2)3

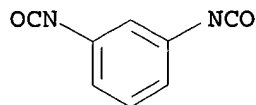
CCI PMS

CM 11

CRN 26471-62-5

CMF C9 H6 N2 O2

CCI IDS



D1-Me

L50 ANSWER 32 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1998:71610 HCAPLUS

DN 128:154554

TI **Flame-retardant and hydrolysis-resistant**
phosphorus-containing polyesters, resin compositions, and their
moldings

IN Yamauchi, Koji; Matsuoka, Hideo; Inoue, Toshihide

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 25 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 10025338	A2	19980127	JP 1996-180923	199607 10

JP 3557792 B2 20040825

PRAI JP 1996-180923 19960710

AB Polyesters with Mn ≥ 500 have (a) repeating units of COArCO (x mol%) and OR1O (y mol%) and (b) ≥ 1 P-contg. units selected from COCHR2CH2POR3CH2CHR2CO (z1 mol%) and OCH2CHR4CH2POR5CH2CHR4CH2O (z2 mol%) [R1 = **halogen-free** divalent org. group; Ar = (C1-12 alkyl, cycloalkyl, aralkyl, aryl-substituted) **halogen-free** divalent arom. group; R2-R5 = (C1-12 alkyl, Ph, cycloalkyl, aralkyl, aryl-substituted) **halogen-free** monovalent org. group; $x + y + z1 + z2 = 100$ mol%; $x + z1 = y + z2$]. Moldings for elec. or electronic parts, automobile parts, or mech. parts are prepd. from the polyesters. or the compns. contg. the polyesters. Thus, di-Me terephthalate and ethylene glycol were trans-esterified in the presence of Sb2O3 and then polycondensed with 4.0 mol% sec-butylbis(3-hydroxypropyl)phosphine oxide (prepd. from 2-butene, PH3, and allyl alc.) to give a title polymer, which was mixed with melamine (**fireproofing** and hydrolysis improving agents) and melt-extruded to give a test piece showing **flame** retardance V-1 and good hydrolysis resistance.

IC ICM C08G063-692

ICS C08K005-3492; C08L067-02

CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37, 76

ST **flame** hydrolysis resistant phosphorus contg polyester;

terephthalate ethylene glycol phosphine oxide copolymer; elec
 electronic automobile mech device; melamine **fireproofing**
 hydrolysis improving agent

IT Fluoropolymers, uses
 Glass fibers, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame-retardant agents; flame-retardant and
 hydrolysis-resistant P-contg. polyesters compns. contg.)

IT Electric apparatus
 (flame-retardant and hydrolysis-resistant P-contg.
 polyesters for moldings of)

IT **Fireproofing** agents
 (halogen-free; flame-retardant and
 hydrolysis-resistant P-contg. polyesters compns. contg.)

IT Antioxidants
 (hindered phenols; flame-retardant and
 hydrolysis-resistant P-contg. polyesters compns. contg.)

IT Automobiles
 (parts; flame-retardant and hydrolysis-resistant
 P-contg. polyesters for moldings of)

IT **Fire-resistant** materials
 (phosphorous-contg. polyesters; flame-retardant and
 hydrolysis-resistant P-contg. polyesters)

IT Polyesters, preparation
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); PREP
 (Preparation); USES (Uses)
 (phosphorus-contg.; flame-retardant and
 hydrolysis-resistant P-contg. polyesters)

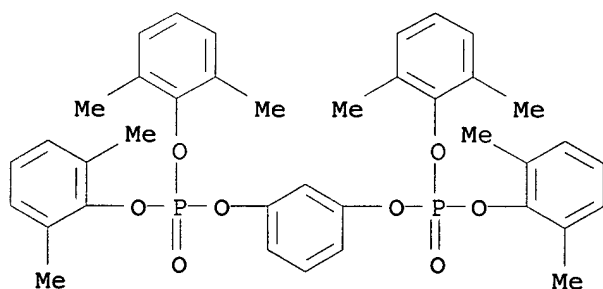
IT Phenolic resins, uses
 Phenoxy resins
 Plastics, uses
 Polyamides, uses
 Polycarbonates, uses
 Polythiophenylenes
 RL: MOA (Modifier or additive use); USES (Uses)
 (thermoplastics, flame-retardant and hydrolysis
 improving agents; flame-retardant and
 hydrolysis-resistant P-contg. polyesters compns. contg.)

IT 6683-19-8, Pentaerythrityl tetrakis[3-(3,5-di-tert-butyl-4-
 hydroxyphenyl)propionate]
 RL: MOA (Modifier or additive use); USES (Uses)
 (Irganox 1010, antioxidants; flame-retardant and
 hydrolysis-resistant P-contg. polyesters compns. contg.)

IT 115-86-6, Triphenoxyphosphine oxide 9002-84-0, Teflon
 139189-30-3
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame-retardant agents; flame-retardant and
 hydrolysis-resistant P-contg. polyesters compns. contg.)

IT 91-76-9, Benzoguanamine 108-78-1, Melamine, uses 108-80-5,
 Cyanuric acid 108-80-5D, Isocyanuric acid, salts 12654-97-6D,
 Triazine, compds.
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame-retardant and hydrolysis improving agents;
 flame-retardant and hydrolysis-resistant P-contg.
 polyesters compns. contg.)

- IT 149611-02-9P 202346-34-7P 202346-35-8P
202346-36-9P 202346-37-0P 202346-38-1P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(flame-retardant and hydrolysis-resistant P-contg. polyesters of)
- IT 79579-99-0P, sec-Butylbis(3-hydroxypropyl)phosphine oxide
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(flame-retardant and hydrolysis-resistant P-contg. polyesters prepd. from)
- IT 107-01-7, 2-Butene 107-13-1, Acrylonitrile, reactions 107-18-6, Allyl alcohol, reactions 115-11-7, Isobutene, reactions 638-21-1, Phenyl phosphine 7722-84-1, Hydrogen peroxide, reactions 7803-51-2, Phosphine
RL: RCT (Reactant); RACT (Reactant or reagent)
(flame-retardant and hydrolysis-resistant P-contg. polyesters prepd. from)
- IT 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-56-9, ABS
RL: MOA (Modifier or additive use); USES (Uses)
(thermoplastics, flame-retardant and hydrolysis improving agents; flame-retardant and hydrolysis-resistant P-contg. polyesters compns. contg.)
- IT 119792-27-7, PR 53194 176365-90-5, Torelina A 670X01
RL: MOA (Modifier or additive use); USES (Uses)
(thermoplastics, flame-retardant and hydrolysis-resistant agents; flame-retardant and hydrolysis-resistant P-contg. polyesters compns. contg.)
- IT 139189-30-3
RL: MOA (Modifier or additive use); USES (Uses)
(flame-retardant agents; flame-retardant and hydrolysis-resistant P-contg. polyesters compns. contg.)
- RN 139189-30-3 HCAPLUS
CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



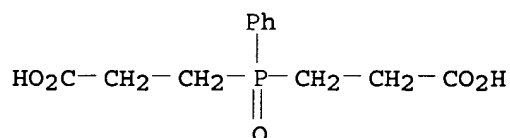
- IT 149611-02-9P 202346-34-7P 202346-35-8P
202346-36-9P 202346-37-0P 202346-38-1P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(flame-retardant and hydrolysis-resistant P-contg.
polyesters of)

RN 149611-02-9 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, dimethyl ester, polymer with
1,2-ethanediol and 3,3'-(phenylphosphinylidene)bis[propanoic acid]
(9CI) (CA INDEX NAME)

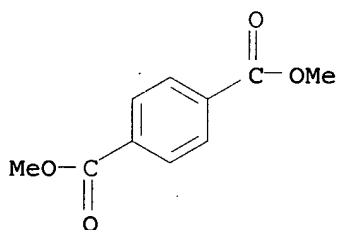
CM 1

CRN 6420-84-4
CMF C12 H15 O5 P



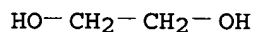
CM 2

CRN 120-61-6
CMF C10 H10 O4



CM 3

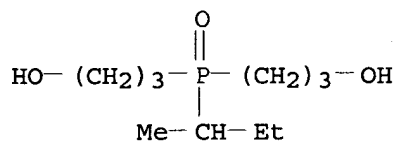
CRN 107-21-1
CMF C2 H6 O2



RN 202346-34-7 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, dimethyl ester, polymer with
1,2-ethanediol and 3,3'-[(1-methylpropyl)phosphinylidene]bis[1-
propanol] (9CI) (CA INDEX NAME)

CM 1

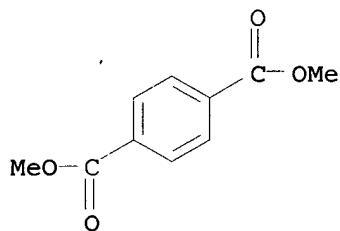
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CMF C10 H23 O3 P



CM 2

CRN 120-61-6

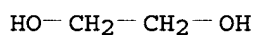
CMF C10 H10 O4



CM 3

CRN 107-21-1

CMF C2 H6 O2



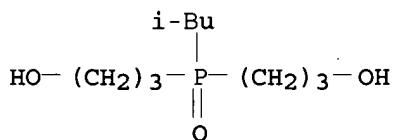
RN 202346-35-8 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester, polymer with
1,2-ethanediol and 3,3'-[(2-methylpropyl)phosphinyldiene]bis[1-
propanol] (9CI) (CA INDEX NAME)

CM 1

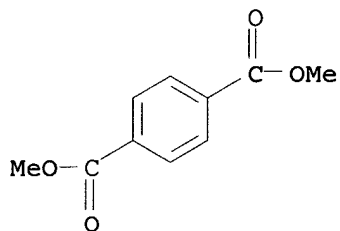
CRN 147768-39-6

CMF C10 H23 O3 P



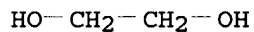
CM 2

CRN 120-61-6
CMF C10 H10 O4



CM 3

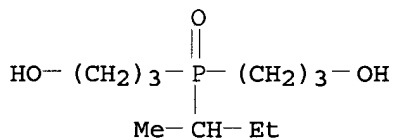
CRN 107-21-1
CMF C2 H6 O2



RN 202346-36-9 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, dimethyl ester, polymer with
1,4-butanediol and 3,3'-[(1-methylpropyl)phosphinylidene]bis[1-
propanol] (9CI) (CA INDEX NAME)

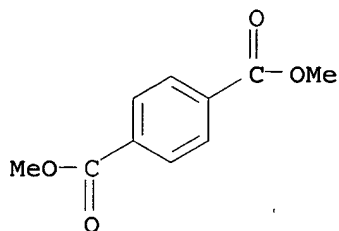
CM 1

CRN 79579-99-0
CMF C10 H23 O3 P



CM 2

CRN 120-61-6
CMF C10 H10 O4



CM 3

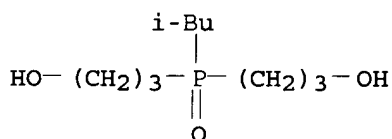
CRN 110-63-4
CMF C4 H10 O2



RN 202346-37-0 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, dimethyl ester, polymer with
1,4-butanediol and 3,3'-[(2-methylpropyl)phosphinylidene]bis[1-
propanol] (9CI) (CA INDEX NAME)

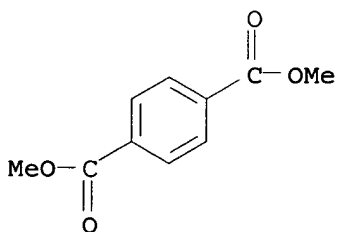
CM 1

CRN 147768-39-6
CMF C10 H23 O3 P



CM 2

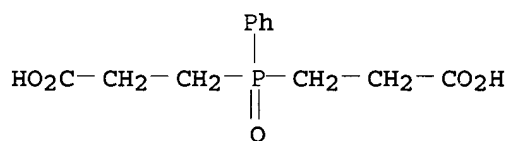
CRN 120-61-6
CMF C10 H10 O4



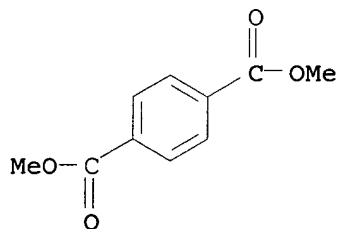
CM 3

CRN 110-63-4
CMF C4 H10 O2 $\text{HO}-(\text{CH}_2)_4-\text{OH}$ RN 202346-38-1 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, dimethyl ester, polymer with
1,4-butanediol and 3,3'-(phenylphosphinylidene)bis[propanoic acid]
(9CI) (CA INDEX NAME)

CM 1

CRN 6420-84-4
CMF C12 H15 O5 P

CM 2

CRN 120-61-6
CMF C10 H10 O4

CM 3

CRN 110-63-4
CMF C4 H10 O2 $\text{HO}-(\text{CH}_2)_4-\text{OH}$

IT 9003-56-9, ABS

RL: MOA (Modifier or additive use); USES (Uses)
(thermoplastics, **flame**-retardant and hydrolysis
improving agents; **flame**-retardant and
hydrolysis-resistant P-contg. polyesters compns. contg.)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

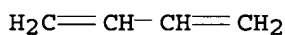
CMF C3 H3 N



CM 2

CRN 106-99-0

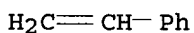
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



L50 ANSWER 33 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1997:684457 HCAPLUS

DN 127:308086

TI **Flame** retardant thermoplastic resin compositions

IN Matsumoto, Kazuaki; Koyama, Tadashi; Ono, Yoshitaka; Fujita,
Katsutoyo; Ohara, Yoichi; Hirobe, Kazushi

PA Kaneka Corp., Japan

SO PCT Int. Appl., 37 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	WO 9738051	A1	19971016	WO 1997-JP1140	199704 02

W: CN, JP, US

RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
PT, SE

EP 893475 A1 19990127 EP 1997-914585 19970402

EP 893475 B1 20030730
R: BE, DE, FR, GB, NL, SE
CN 1221441 A 19990630 CN 1997-195314 19970402

JP 2000327901 A2 20001128 JP 2000-134687 19970402

JP 3454515 B2 20031006 JP 1997-536045 19970402

US 2001012865 A1 20010809 US 1998-147114 19981006

US 6329451 B2 20011211

PRAI JP 1996-112014 A 19960408
JP 1996-245571 A 19960827
JP 1996-279655 A 19961022
JP 1997-536045 A3 19970402
WO 1997-JP1140 W 19970402

OS MARPAT 127:308086

AB The compns. which, by virtue of addn. of a very small amt. of stabilized red phosphorus, can simultaneously realize improved heat resistance and chlorine-free and bromine-free **flame** retardation and, in addn., possesses long-term heat stability, reduced emission of foul odor, and other properties. The compn. comprises (A) 50-95 parts a polycarbonate resin, (B) 5-50 parts a thermoplastic polyester resin, (C) 0.1-5 parts (based on 100 parts A and B) a coated, stabilized red phosphorus, and optionally, (D) 0.1-100 parts (based on 100 parts A and B) a silicate compd.

IC ICM C08L069-00
ICS C08K003-32; C08K003-34; C08K005-52; C08L069-00; C08L067-00; C08L027-12; C08L083-04; C08L023-00; C08L051-04

CC 37-6 (Plastics Manufacture and Processing)

ST **halogen free flame** retardant
thermoplastic blend; polycarbonate polyester blend **flame** retardant; **fireproofing** agent red phosphorus
thermoplastic; phosphate **fireproofing** agent thermoplastic blend

IT Mica-group minerals, uses
RL: MOA (Modifier or additive use); USES (Uses)
(A 21S; **flame** retardant thermoplastic resin compns. contg. stabilized red phosphorus)

IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(Polyflon FA 500; **flame** retardant thermoplastic resin compns. contg. stabilized red phosphorus)

IT Polycarbonates, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(arom.; **flame** retardant thermoplastic resin compns.)

contg. stabilized red phosphorus)

IT Hydroxides (inorganic)
 RL: TEM (Technical or engineered material use); USES (Uses)
 (coatings for red phosphorus; **flame** retardant
 thermoplastic resin compns. contg. stabilized red phosphorus)

IT **Fireproofing** agents
 (flame retardant thermoplastic resin compns. contg.
 stabilized red phosphorus)

IT Polyesters, properties
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (flame retardant thermoplastic resin compns. contg.
 stabilized red phosphorus)

IT Polymer blends
 RL: PRP (Properties)
 (flame retardant thermoplastic resin compns. contg.
 stabilized red phosphorus)

IT Plastics, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (thermosetting, coatings for red phosphorus; **flame**
 retardant thermoplastic resin compns. contg. stabilized red
 phosphorus)

IT 9002-84-0, PTFE
 RL: MOA (Modifier or additive use); USES (Uses)
 (Polyflon FA 500; **flame** retardant thermoplastic resin
 compns. contg. stabilized red phosphorus)

IT 21645-51-2, Aluminum hydroxide, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (coatings for red phosphorus; **flame** retardant
 thermoplastic resin compns. contg. stabilized red phosphorus)

IT 115-86-6, Triphenyl phosphate 57583-54-7, Resorcinol
 bis(diphenyl)phosphate 93981-32-9, Bisphenol A
 bis(dicresyl)phosphate 124784-27-6, Hydroquinone
 bis(di-2,6-xylyl)phosphate 139189-30-3, Resorcinol
 bis(di-2,6-xylyl)phosphate
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fireproofing** agent; **flame** retardant
 thermoplastic resin compns. contg. stabilized red phosphorus)

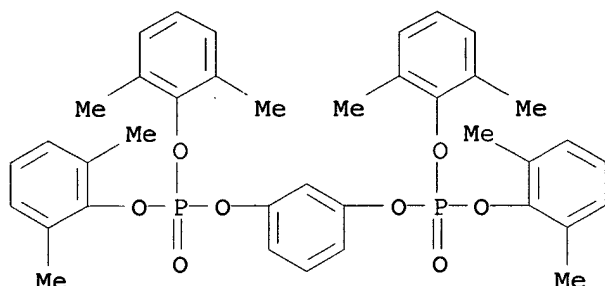
IT 7723-14-0, Red phosphorus, uses 9010-86-0, Evaflex EEA-A
 713 14807-96-6, Micro Ace K-1, uses 107080-92-2, Kaneace
 M 511
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardant thermoplastic resin compns. contg.
 stabilized red phosphorus)

IT 24968-12-5, Polybutylene terephthalate 25038-59-9,
 PET polyester, properties 26062-94-2, Polybutylene
 terephthalate
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (flame retardant thermoplastic resin compns. contg.
 stabilized red phosphorus)

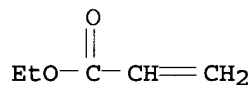
IT 139189-30-3, Resorcinol bis(di-2,6-xylyl)phosphate
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fireproofing** agent; **flame** retardant
 thermoplastic resin compns. contg. stabilized red phosphorus)

RN 139189-30-3 HCAPLUS

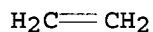
CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



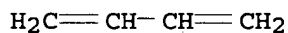
IT 9010-86-0, Evaflex EEA-A 713 107080-92-2, Kaneace
 M 511
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardant thermoplastic resin compns. contg.
 stabilized red phosphorus)
 RN 9010-86-0 HCAPLUS
 CN 2-Propenoic acid, ethyl ester, polymer with ethene (9CI) (CA INDEX
 NAME)
 CM 1
 CRN 140-88-5
 CMF C5 H8 O2



CM 2
 CRN 74-85-1
 CMF C2 H4



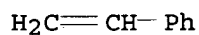
RN 107080-92-2 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
 1,3-butadiene and ethenylbenzene, graft (9CI) (CA INDEX NAME)
 CM 1
 CRN 106-99-0
 CMF C4 H6



CM 2

CRN 100-42-5

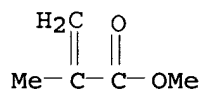
CMF C8 H8



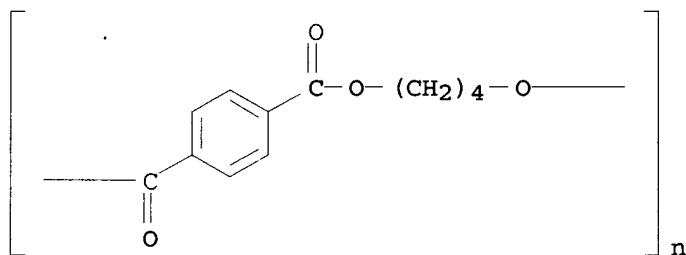
CM 3

CRN 80-62-6

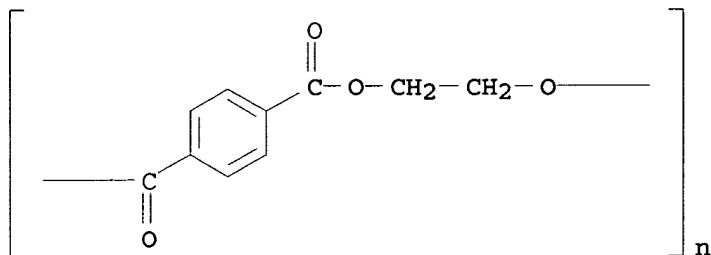
CMF C5 H8 O2



IT 24968-12-5, Polybutylene terephthalate 25038-59-9,
 PET polyester, properties 26062-94-2, Polybutylene
 terephthalate
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (flame retardant thermoplastic resin compns. contg.
 stabilized red phosphorus)
 RN 24968-12-5 HCAPLUS
 CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
 INDEX NAME)



RN 25038-59-9 HCAPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
 INDEX NAME)



RN 26062-94-2 HCAPLUS
 CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA
 INDEX NAME)

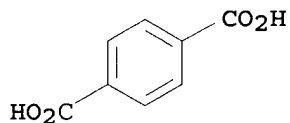
CM 1

CRN 110-63-4
 CMF C4 H10 O2

HO-(CH₂)₄-OH

CM 2

CRN 100-21-0
 CMF C8 H6 O4



L50 ANSWER 34 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1997:650825 HCAPLUS
 DN 127:332312
 TI **Flame**-retardant thermoplastic resin compositions
 containing polyphosphates with excellent bleeding-out resistance
 IN Yamauchi, Koji; Matsuoka, Hideo; Inoue, Toshihide
 PA Toray Industries, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 15 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

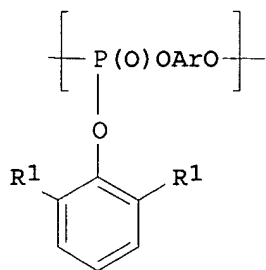
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09255877	A2	19970930	JP 1996-68842	

199603

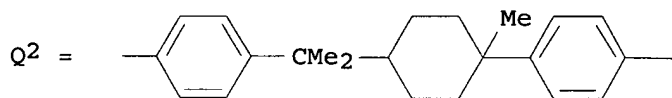
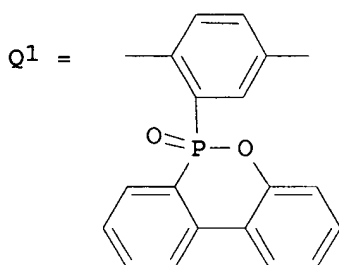
25

JP 3555313
PRAI JP 1996-68842
GI

B2 20040818
19960325



I



AB Title compns., useful for automobiles and construction materials, comprise 100 parts thermoplastic resins and 1-100 parts polyphosphates comprising repeating unit I [R1 = H, C1-5 alkyl; Ar = Ph (substituted with **halo-free** org. residues)] and showing polystyrene-converted no.-av. mol. wt. (Mn; by GPC) $\geq 10,000$ and soly. to Me₂CO, CHCl₃, DMF, DMSO, and/or THF ≥ 90 wt.%. The substituents Ar may be p- or m-phenylene, C₆H₄-p-CMe₂C₆H₄, Q1, Q2, or C₆H₄-p-XC₆H₄ (X = single bond, O, S, SO₂, CH₂, CHPh). The compns. may contain 1-100 parts (iso)cyanuric acid salts of triazine compds., 1-50 parts **halogen-free fireproofing** agents, 0.01-10 parts fluoropolymers, 0.01-3 parts hindered phenol-type stabilizers, or 5-140 parts fillers. Thus, 2,6-dimethylphenylphosphoric acid dichloride was polymd. with equimolar hydroquinone at 150-220° in the presence of MgCl₂ to give a polymer, 20 parts of which was blended with 100 parts poly(butylene terephthalate), kneaded, pelletized, and injection-molded to give a specimen showing Izod impact strength 40 j/m, deflection temp. 58°, UL 94 **fire** resistance rating V2, and less bleeding out of phosphates after 100° + 24 h treatment.

IC ICM C08L085-02

ICS C08L101-00

CC 37-6 (Plastics Manufacture and Processing)

ST polyphosphate thermoplastic resin blend bleeding resistance; phenylphosphoric acid hydroquinone copolymer **fireproofing** agent

IT Polyesters, properties

- RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(arom.; thermoplastic compns. **fireproofed** with polyphosphates showing excellent bleeding-out resistance)
- IT **Fireproofing agents**
(thermoplastic compns. **fireproofed** with polyphosphates showing excellent bleeding-out resistance)
- IT Fluoropolymers, properties
Fluoropolymers, properties
Polyphosphates
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(thermoplastic compns. **fireproofed** with polyphosphates showing excellent bleeding-out resistance)
- IT Polyamides, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(thermoplastic compns. **fireproofed** with polyphosphates showing excellent bleeding-out resistance)
- IT Polycarbonates, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(thermoplastic compns. **fireproofed** with polyphosphates showing excellent bleeding-out resistance)
- IT Polyesters, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(thermoplastic compns. **fireproofed** with polyphosphates showing excellent bleeding-out resistance)
- IT Polymer blends
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(thermoplastic compns. **fireproofed** with polyphosphates showing excellent bleeding-out resistance)
- IT Polyoxyalkylenes, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(thermoplastic compns. **fireproofed** with polyphosphates showing excellent bleeding-out resistance)
- IT 91-76-9 115-86-6, Triphenyl phosphate 9002-84-0,
Polytetrafluoroethylene 37640-57-6, Melamine cyanurate
139189-30-3 175716-99-1 197661-64-6 197661-65-7
197661-66-8
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(thermoplastic compns. **fireproofed** with polyphosphates showing excellent bleeding-out resistance)
- IT 9003-56-9, ABS resin 24968-12-5, Polybutylene terephthalate 25038-54-4, Nylon 6, properties 25038-59-9, Polyethylene terephthalate, properties 25322-69-4, Poly(propylene oxide) 26062-94-2, Polybutylene terephthalate 32131-17-2, Nylon 66, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(thermoplastic compns. **fireproofed** with polyphosphates showing excellent bleeding-out resistance)

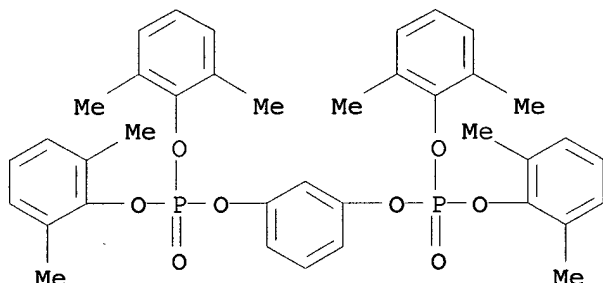
IT 139189-30-3

RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(thermoplastic comps. **fireproofed** with polyphosphates showing excellent bleeding-out resistance)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



IT 9003-56-9, ABS resin 24968-12-5, Polybutylene terephthalate 25038-59-9, Polyethylene terephthalate, properties 26062-94-2, Polybutylene terephthalate

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(thermoplastic comps. **fireproofed** with polyphosphates showing excellent bleeding-out resistance)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

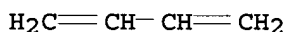
CMF C3 H3 N



CM 2

CRN 106-99-0

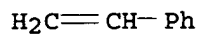
CMF C4 H6



CM 3

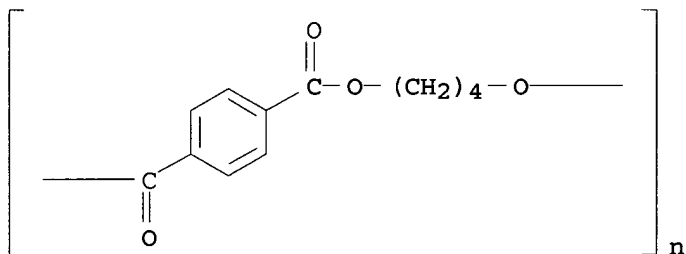
CRN 100-42-5

CMF C8 H8



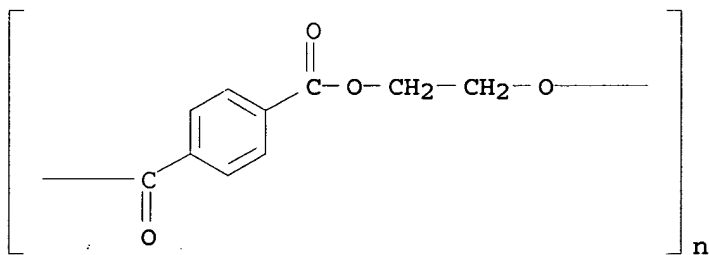
RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



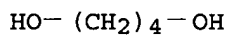
RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

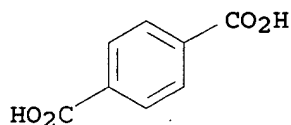
CMF C4 H10 O2



CM 2

CRN 100-21-0

CMF C8 H6 O4



L50 ANSWER 35 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1997:80514 HCAPLUS

DN 126:90234

TI **Halogen-free flame-retardant resin**
composition with good impact, chem., discoloration, silver
streaking, and heat resistance and moldability

IN Koyama, Tadashi; Mogami, Kenji; Asada, Masahiro

PA Kanegafuchi Kagaku Kogyo Kabushiki Kaisha, Japan

SO PCT Int. Appl., 38 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9637555	A1	19961128	WO 1996-JP1376	19960524
W: US RW: AT, BE, CH, DE, DK; ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 08319406	A2	19961203	JP 1995-152715	19950526
EP 829517	A1	19980318	EP 1996-914417	19960524
EP 829517	B1	20001018		
R: BE, DE, FR, GB, NL, SE				
US 5871570	A	19990216	US 1997-952652	19971124

PRAI JP 1995-152715 A 19950526
WO 1996-JP1376 W 19960524

AB The title compn. comprises 100 parts resin comprising (A) a polycarbonate having a viscosity-av. mol. wt. 16000-29000 and (B) poly(alkylene terephthalate) in wt. ratio 75/25 to 90/10, (C) 1-10 parts copolymer comprising a rubbery polymer and ≥ 1 one monomer selected from arom. vinyl monomers, vinyl cyanate monomers, (meth)acrylic acid, (meth)acrylic esters, and maleimide monomers, (D) 2-10 parts organophosphorus flame retardants, (E) 0.05-2 parts fluororesins and (F) 0.01-10 parts **halogen-free** epoxy compds. An injection-moldable compn. comprised bisphenol A polycarbonate 82.5, PET 17.5, butadiene-Me methacrylate copolymer 5, ADK Stab PFR 4.5, ADK Stab EP-22 0.6, PTFE 0.6,

bis(2,6-di-tert-butyl-4-methylphenyl) pentaerythritol diphosphite
0.5, and pentaerythritol tetrakis(3,5-di-tert-butyl-4-hydroxyhydrocinnamate) 0.2 part.

IC ICM C08L069-00
ICS C08K005-521; C08K005-15

CC 37-6 (Plastics Manufacture and Processing)

ST polycarbonate polyester blend **fireproof**; butadiene
methacrylate copolymer polycarbonate blend **fireproof**;
phosphorus compd **fire** retardant polycarbonate;
fluoropolymer polycarbonate blend **fireproof**; epoxy compd
polycarbonate blend **fireproof**

IT **Fireproofing** agents
(**halogen-free flame**-retardant resin
compn. with good impact, chem., discoloration, silver streaking,
and heat resistance and moldability)

IT Epoxy resins, properties
Fluoropolymers, properties
Polycarbonates, properties
Polyesters, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(**halogen-free flame**-retardant resin
compn. with good impact, chem., discoloration, silver streaking,
and heat resistance and moldability)

IT Plastics, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(thermoplastics; **halogen-free flame**
-retardant resin compn. with good impact, chem., discoloration,
silver streaking, and heat resistance and moldability)

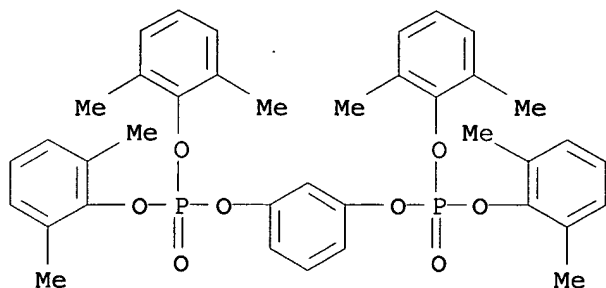
IT 25085-99-8 26444-49-5, Cresyl diphenyl phosphate 57583-54-7, ADK
Stab PFR 93981-32-9, Phosflex 580 124784-27-6
139189-30-3, Resorcinol bis(di-2,6-xylyl) phosphate
RL: MOA (Modifier or additive use); USES (Uses)
(**halogen-free flame**-retardant resin
compn. with good impact, chem., discoloration, silver streaking,
and heat resistance and moldability)

IT 3101-60-8, Denacol EX 146 9002-84-0, PTFE 24936-68-3, Bisphenol
A polycarbonate, properties 25037-45-0 25038-59-9,
properties 25053-09-2, MBS resin 25068-38-6
25232-40-0, Butadiene-methyl methacrylate copolymer
30973-88-7, Denacol EX 411
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(**halogen-free flame**-retardant resin
compn. with good impact, chem., discoloration, silver streaking,
and heat resistance and moldability)

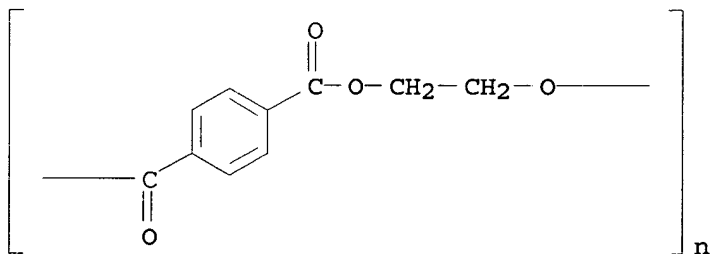
IT 139189-30-3, Resorcinol bis(di-2,6-xylyl) phosphate
RL: MOA (Modifier or additive use); USES (Uses)
(**halogen-free flame**-retardant resin
compn. with good impact, chem., discoloration, silver streaking,
and heat resistance and moldability)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



IT 25038-59-9, properties 25053-09-2, MBS resin
 25232-40-0, Butadiene-methyl methacrylate copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (halogen-free flame-retardant resin
 compn. with good impact, chem., discoloration, silver streaking, and heat resistance and moldability)
 RN 25038-59-9 HCAPLUS
 CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)

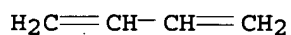


RN 25053-09-2 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

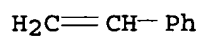
CMF C4 H6



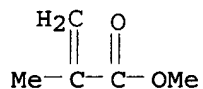
CM 2

CRN 100-42-5

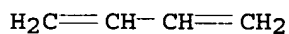
CMF C8 H8



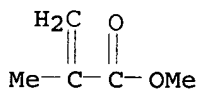
CM 3

CRN 80-62-6
CMF C5 H8 O2RN 25232-40-0 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0
CMF C4 H6

CM 2

CRN 80-62-6
CMF C5 H8 O2

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(FILE 'HOME' ENTERED AT 11:24:26 ON 03 OCT 2005)

FILE 'HCAPLUS' ENTERED AT 11:24:36 ON 03 OCT 2005

L1 1 S US20040149404/PN
SEL RN

FILE 'REGISTRY' ENTERED AT 11:25:06 ON 03 OCT 2005

L2 5 S E1-E5

FILE 'WPIX' ENTERED AT 12:11:10 ON 03 OCT 2005

L3 1 S L1

FILE 'HCAPLUS' ENTERED AT 12:19:38 ON 03 OCT 2005

L4 1581195 S VALV? OR GATE? OR APERTUR? OR CHANNEL? OR HOLE? OR EX
L5 38364 S (LIQUOR? OR LIQUID? OR FILTRAT? OR PLANT? OR PULP? OR
L6 7323 S L4 AND L5
L7 6010 S L4 (L) L5
L8 1592 S ((PRESSUR? OR FLOW?) (A) CONTROL? OR PC OR FC) (2A) VALV?
L9 37 S L7 AND L8
L10 4 S L9 AND FEED?
L11 0 S L9 AND PAPER?/SC
L12 12049 S (PLANT? OR PULP? OR WOOD? OR CELLULOS?) (2A) (EFFLUENT?
L13 441 S L4 (L) L12
L14 0 S L13 AND L8
L15 0 S L13 AND L1
L16 0 S L12 AND L8
L17 39 S L13 AND PAPER?/SC
L18 1592 S L4 (L) L8
L19 4 S L18 AND CELLULOS?/SC
L20 4 S L18 AND CELLULOS?/SC, SX
L21 0 S L9 AND CELLULOS?/SC, SX
L22 9 S L17 AND (DEVICE? OR APPARATUS?)
L23 13 S L11 OR L14 OR L15 OR L16 OR L19 OR L20 OR L21 OR L22
L24 0 S L18 AND L12
L25 41 S L18 AND L5
L26 0 S L25 AND CELLULOS?/SC
L27 13 S L23 OR L24 OR L26